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THE NEW DISPENSATORY:

CONTAINING

I.
The ELEMENTS of PHARMA-
CEUTICAL CHEMISTRY.

ranted by Experience and Observa-
tion.

II.
The MATERIA MEDICA: or, An
Account of the Substances employed in
Medicine; with the Virtues and Uses
of each Article, so far as they are war-

III.
PHARMACEUTICAL PREPA-
RATIONS.

IV.
MEDICINAL COMPOSITIONS.

THE TWO LATTER PARTS COMPREHENDING
The PREPARATIONS and COMPOSITIONS of the LAST LONDON and
EDINBURGH PHARMACOPOEIAS; with such of the old ones
as are kept in the SHOPS;

Also

The most celebrated FOREIGN MEDICINES; the most useful of those
directed in the HOSPITALS; and sundry elegant
EXTEMPORANEOUS FORMS:

Digested

In such a METHOD as to compose a Regular SYSTEM of PHARMACY;

With

REMARKS on their Preparation and Uses; the Means of distinguishing Adulterations; of
performing the more difficult and dangerous Processes with ease and Safety, &c.

The whole interspersed with

PRACTICAL CAUTIONS and OBSERVATIONS.

Being an ATTEMPT to collect and apply the

L A T E R D I S C O V E R I E S

TO THE DISPENSATORY PUBLISHED.

By W. LEWIS, M.B. F.R.S. *K*

With

New TABLES of ELECTIVE ATTRACTIONS, *Single and Double;*
of ANTIMONY, MERCURY, &c.

And

COPPERPLATES OF PHARMACEUTICAL INSTRUMENTS.

BY GENTLEMEN OF THE FACULTY AT EDINBURGH.

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P R E F A C E

BY THE

E D I T O R.

THE superiority of Dr Lewis's Dispensatory has been so universally admitted, that it has almost superseded every other work of the kind. But when we consider the many improvements which have been lately made in Chemistry, Natural History, and Medicine; and that the edition of the Edinburgh Pharmacopœia on which Dr Lewis commented, was published so far back as 1756; it will be readily granted, that after a period of thirty years, much room must be left for altering and improving this Book. How far the present attempt is successful, the Public must judge for themselves.

The Materia Medica, so far as respects the several articles, was conducted by one person: The rest of the Book was managed by another. Although the articles in the present edition of the Edinburgh Pharmacopœia appear sufficiently numerous for any useful purpose; yet in compliance with those who may think otherwise, or who have been long accustomed to use certain substances on Dr Lewis's authority, though expunged from that edition, most of them have been retained, being at the same time distinguished by the mark + as obsolete. This plan may at the same time furnish the Student with a key, to discover the reasons for several alterations made by that College of late years.

. In

In considering the Medicinal Effects of several Preparations and Compositions, the Author is aware, that his high esteem for the writings of Dr Lewis may have led him to an appearance of assent deserving some censure; but to say the truth, notwithstanding the credulity of the times, Dr Lewis has been as wary in ascribing virtues to remedies, as any writer of equal modesty and deference to the opinions of others.

The Author, however, has been more especially solicitous to improve the Pharmaceutical part of the Work; and his attempts to that purpose will be soon perceived by the Reader.

EDINBURGH, }
Nov. 1785. }

P R E F A C E

By Dr LEWIS.

THE New Dispensatory was intended as a regular book of practical and scientific pharmacy; composed on principles agreeable to those on which the Colleges of London and Edinburgh have proceeded in the late reformation of their officinal Pharmacopœias; containing full and clear directions, drawn from actual experience, for the preparation of the several medicines, particularly where accompanied with any difficulty or danger; and assigning every where, as far as possible, their real virtues and uses: intentions which, though of primary importance in a work of this kind, do not seem to have been at all regarded in the other Dispensatories that have hitherto appeared.

The author has had the satisfaction of finding that his endeavours have not been in vain; that though the work fell very far short of the perfection which he wished for, it was distinguished with approbations even beyond his hopes; with approbations, which have induced the compilers of the other Dispensatories to borrow very considerable parts of it in their last editions; in one of which, besides many paragraphs and entire pages here and there, the greatest part of two hundred pages together is illiberally copied from this work.

In this edition I have made many material corrections and additions, and retrenched fundry exceptionable particulars, which, in compliance with common prejudices, had been admitted in the first attempt.

The first part contains the Elements of Pharmacy, or what is commonly called *Pharmaceutical Chemistry*. The general neglect of this interesting and useful study as applied to medicinal subjects, has engaged me to greatly enlarge this part, and to labour it with more care and precision. I have endeavoured to give a concise and systematic view of the general properties and relations of vegetable, animal, and mineral bodies; the different medicinal principles they contain; the means of extracting and separating their native component parts, without making any alteration in their qualities; and the different forms and powers which they assume, from different natural or artificial operations, or from the mixture and coalition of one with another; avoiding every where all hypothetical reasonings, and delivering only the direct result of experiment and observation. To this history is added a practical account of the instruments and operations of the art; which, it is hoped, will give the reader a full idea of them, without the tediousness of minute details.

The next part contains the *Materia Medica*, or Medicinal Simples; which, for reasons assigned in the introduction to this part, are all ranged in alphabetic order. Rationales of the operations of medicines, which are at best but conjectural and unsatisfactory, have no place in this practical work: But some general observations, of the sensible effects of certain classes of medicines in Cartheuser's manner, it has been thought expedient to retain, with some amendments from the former editions.

In

In treating of the several simples themselves, I have given, where necessary, a description of the simple, with the marks of its genuineness and goodness; and pointed out the distinguishing characters of such as, from a resemblance in external appearance, are liable to be confounded with others of different qualities. With regard to their virtues, particular care has been taken to reject the fabulous ones, which are still preserved in other books of this kind; and to give only those which have either been confirmed by repeated experience, or may be rationally inferred from the sensible qualities of the subject, or from its agreement in smell, taste, &c. with others of known virtue. Under each simple are mentioned all the preparations made from it, and all the compositions in which it is an ingredient, in the London and Edinburgh Pharmacopœias. Many of the capital articles I have examined pharmaceutically, and shown in what separable part of the mixt its virtue resides, by what means the active principle is best extracted or preserved, and in what form the substance itself or its preparations are most commodiously and advantageously exhibited. At the end of this part, the directions for the collection and preservation of medicinal substances are re-considered.

The third and fourth parts contain the Preparations and Compositions of the New London and Edinburgh Pharmacopœias; with a few of the old ones, which I am informed are still kept in some shops, and occasionally called for; several of the more celebrated medicines, which have come into esteem in France and Germany; many from our hospitals; and some elegant extemporaneous prescriptions, such as are directed in practice.

In the distribution of these materials, it has been found necessary to depart from the order hitherto

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In the distribution of these materials, it has been found necessary to depart from the order hitherto

received. In other Dispensatories, and in a former edition of this, medicines are divided into two general heads, *Officinal* and *Extemporaneous*. This division is apparently faulty: for many of those called *officinal*, are strictly extemporaneous, being made only as they are wanted; and many of those which are called *extemporaneous*, are very well fitted for keeping. If we should appropriate the term *officinal* to those which have the sanction of public Colleges, then this absurdity would follow, that medicines of as tedious preparation as any in the book, even Baumé's extract of opium, which requires several months continual boiling, would be extemporaneous preparations.

To avoid this impropriety, and that of repeating the same forms, and frequently almost the same compositions, in different parts of the book, I have ranged medicines of similar preparation or composition in one class, without regard to the inessential circumstances of their being used at London or at Edinburgh, at Paris or at Berlin, in the shops or in the hospitals; and have endeavoured to dispose them in such a manner, as to form, so far as could be done with such materials, one regular whole, a connected system of practical pharmacy: That the medicines of the London and Edinburgh Colleges may be the more readily known from the others, their titles are printed in a larger character. The distinction, indeed, between preparations and compositions, the former of which make the third part, and the latter the fourth, is not perhaps altogether unexceptionable, considering the great multiplicity and diversity of the subjects, many of which partake of the nature of both, though some more of one, and others of the other. But this does not all affect the plan, or produce

duce any disorder in the system, which continues the same whether this distinction is retained or dropt.

The Edinburgh medicines are taken from the last edition of the *Pharmacopœia Edinburgensis*, published in the year 1756, a complete translation of which has not before appeared.

In translating the several prescriptions, wherever the originals appeared too concise or obscure, the liberty has been taken of expressing the directions in a more full and clear manner, with care not to vary the sense. The ingredients in the several compositions are, for the greater distinctness (a point which throughout the whole has been particularly aimed at), ranged in different lines, as in the originals. For want of some method of this kind, there are instances of ingredients being confounded, and two articles mistaken for one.

To the several medicines is subjoined, where it seemed requisite, an account of the principles on which they are built, together with their virtues, use, and dose, and the cautions necessary to be observed in the exhibition of them. To the more difficult or dangerous operations is added a full description of the method of performing them with advantage and safety; and to such medicines as are liable to sophistication, the means of distinguishing the genuine from the adulterated. In these practical remarks on the particular preparations, and on the general classes of them at the beginning of the respective chapters and sections, the author has laboured with diligence; if he has succeeded in executing his intentions, the directions are such as may enable every apothecary to prepare, as it is his duty to do, all his own medicines.

The tables, inserted in a former edition, were so well received, that the other Dispensatories have copied

piated them entire. One of these tables however, that of specific gravities, appears on re-examining it to be exceptionable: great part of it was drawn from Dr Freind's experiments in his *Prælectiones Chymicæ*, in which the numbers by some accident have been so faultily set down, that no dependence can be had upon them; and few other hydrostatical experiments have been made on medicinal substances or their preparations. I have therefore now thrown out that table, but preserved all that was valuable in it, reduced to a more useful form, in the table of the weights of certain measures of different fluids. I have likewise added several new ones, greatly enlarged the others, so as to render them of more utility in practice, and distributed them in the different parts of the work to which they belong. The facts on which they are built, where no authority is mentioned, are in all cases (except only in the above mentioned table of weights) from my own experience.

The author is sufficiently sensible, that there are still many imperfections in this performance; but hopes it will appear, that he has every where consulted the dignity of the art, the ease and advantage of the operator, and the health of the patient.

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* * The useful compositions of the *Pharmacopœia Pauperum*, which made a distinct part in a former edition, are here distributed in the two foregoing parts; all the medicines of similar forms being now, for the convenience of the reader, placed together.

INTRODUCTION.

Definition and Division of PHARMACY.

PHARMACY is the art of preparing and compounding natural and artificial substances for medicinal purposes, in a manner suitable to their respective properties and the intentions of cure.

This art has been commonly divided into two branches, **GALENICAL** and **CHEMICAL**: but no rational principle of distinction between them has yet been fixed on. If it be a chemical process to evaporate juice of plantane over a gentle fire till it becomes thick, it is surely not less chemical to evaporate the juice of sloes in the same manner; and yet the former only is ranked among the Chemical, and the latter among the Galenical preparations. Frequently, also, one and the same preparation is in different pharmacopœias referred to the different branches: Thus distilled waters and distilled spirits, which make the first of the Galenical articles in one Pharmacopœia, make the first of the Chemical in a nother.

It is agreed on both sides, that essential oils, extracts, resins, volatile and fixt salts, the artificial neutral salts, metallic preparations, and other like productions, belong to the Chemical pharmacy; and pills, boluses, troches, electaries, draughts, ointments, plasters, poultices, &c. to the Galenical; as if the distinction was founded, neither on the nature of the operation, nor of the materials, nor of the effect produced, but merely on the form in which the medicine is intended to be taken or applied. Thus, the dissolution of mercury in aquafortis is ranked among the Chemical preparations; while the very same process, with the additional circumstance of uniting an unctuous material, which renders it, if any thing, still more chemical, is nevertheless reckoned a Galenical one, because the product is used as an ornament. It cannot surely be supposed, that this is a just division, or that the same process or preparation can become chemical or not chemical, according to the intention to which they are applied, or the form in which the product is used.

If vitriol of iron (that is, iron united with a certain acid) and any volatile alkaline salt, as that of hartshorn or sal ammoniac, be put together into water in due proportions; the pungent smell of the volatile salt will be immediately suppressed, this salt uniting with the acid of the vitriol into a new compound, while the iron is separated and thrown out. This is undoubtedly a chemical effect; and this effect will happen wherever those two ingredients meet together in a moist state, whatever the form of the medicine be. It is obvious therefore, that the Galenical forms are by no means independent of chemistry; and that this science extends to mixtures of the most simple kind.

The London College has very judiciously rejected this division; a division apparently derived from prejudice and superficial knowledge, and which has been continued only in compliance with custom. Pharmacy, in its full extent, is no other than a branch of chemistry; and the most simple pharmaceutical preparations are so far chemical, as they have any dependence upon the properties or relations of the materials.

PHAR-

PHARMACY, according to our definition, may be divided into THEORETICAL and PRACTICAL. The former teaches the knowledge of the medicinal substances themselves, their various properties, qualities, and relations to one another, and their general effects on the human body: the latter, the skilful performance of the several processes or operations by which they are adapted to particular uses.

What is here called *theory*, is not to be understood as consisting of speculative truths, or philosophical investigations, calculated for explaining the phenomena, or teaching the rationale of the effects produced. The theory of pharmacy is the direct result of experiment and observation, or rather a general and comprehensive view of experiments and facts themselves; it may be termed *Scientific Pharmacy*, in distinction from mere manual labour.

Scientific Pharmacy includes all those facts which relate to—the reduction of medicinal substances into different forms, and the forms in which particular substances are most commodiously or advantageously used;—their relations to one another in regard to miscibility, and the means by which those, that of themselves are not miscible, may be made to unite;—the separation of the medicinal from the inactive matter, and of different kinds of medicinal matter from one another when combined together in the same subject, on the principle of one being dissoluble in liquors which will not dissolve the other, of one being exhalable by heat, while the other remains fixt, &c.;—the alterations which the medicinal parts themselves undergo, in different circumstances, and by different methods of treatment;—the production of new properties and medicinal powers from the coalition of dissimilar things;—with many other particulars analogous to these.

It is obvious, that a perfect acquaintance with pharmacy considered in this light, is essentially necessary to the due exercise of the art of physic. Without it, the prescriber must often err in the choice of materials for the different forms of preparation or composition, or in adapting a manner of preparation to given materials; and often be deceived also in the medicinal effects which the known powers of the ingredients, separately, gave room to expect.

It would be inconsistent with the nature of a dispensatory, to wholly detach the scientific part of pharmacy from that which is more directly practical; for the science gradually results in the course of the practical details. In the first part of the work it has been thought expedient to premise a summary view of the general elements of the art, both practical and scientific, that the reader may be the better prepared for the particular subjects and processes which follow in the second and third parts.

We here subjoin an abstract from the Syllabus of Dr Webster's Lectures on Chemistry and Materia Medica. It will give the reader a method of arranging the subjects, and may at the same time be useful in supplying the want of synonymes in this work.

ABSTRACT from Dr WEBSTER'S SYLLABUS of Lectures
on Chemistry and Materia Medica.

CHEMISTRY is the study of the *invisible* actions of the *particles* of the *different* kinds of matter on one another; that is, the study of mixture.

That power by which such particles unite is called *chemical attraction*.

MATTER has been commonly arranged into six kinds. 1. *Salts*; syn. saline bodies. 2. *Earths*; syn. earthy bodies, stones. 3. *Inflammables*; syn. combustibles. 4. *Metals*; syn. metallic bodies. 5. *Waters*; syn. watery or aqueous bodies. 6. *Airs*; syn. gases, gaseous or aerial bodies, permanent vapours. The kinds of matter not comprehensible in the above arrangement, are, 1. Heat; syn. absolute or elementary heat or fire, principle or matter of heat. 2. Light; syn. matter of light, luminous principle. 3. Electrical fluid. 4. Magnetical fluid. 5. Peculiar vegetable and animal matters; as gum; colouring-matter; starch, or amylaceous matter; vegeto-animal gluten, coagulable lymph, or fibre of the blood.

1. **SALTS** are sapid, soluble in water, generally unflammable. They are simple and compound.

The simple are so called, as being ingredients in the compound, and are *acids* and *alkalis*.

The compound salts are saline and middle, *i. e.* the earthy, and metallic; as the acidated alkalis, earths, and metals.

The saline, syn. neutral, acido-alkaline, sales falsi, consist of two or more simple salts. The earthy, syn. saline earths, consist of a simple salt and an earth. The metallic consist of a simple or saline salt and a metal. The salts consolidated with water in a regular form are said to be crystallised.

A salt is said to be, 1. Deliquescent when it attracts water from the air; syn. aquefcent. 2. Spontaneously calcinable, when the water of its crystals is attracted by the air; syn. efflorescent, deaquefcent. 3. Subject to the watery fusion, when it is soluble by heat in its crystalline water. 4. Decrepitating, when it crackles in the fire, owing to its small quantity of water becoming suddenly elastic vapour; syn. subaquated. 5. Deflagrating, when, from the pure air which it contains, it can support and accelerate combustion; syn. detonating, deaërescent; as salts containing acid of nitre.

2. **EARTHS**, except lime and barytes, are insipid; difficultly soluble in water, difficultly fusible becoming glass, unflammable, unmetallisable, and not heavier than five times their bulk of water.

3. **INFLAMMABLES**, when set on fire, burn till resolved into salts, earths, water, or some mixture of these

4. **METALS** are opaque, bright bodies, not lighter than six times their bulk of water.

The inflammables and metals are supposed to owe their distinguishing qualities to their containing a subtile fluid called *phlogiston*, syn. principle of inflammability or metallisation, sulphureous, oleous, spirituous or inflammable

flammable principle, fixt fire, pure inflammable air. The inflammables and metals are called *phlogistic bodies*, or, as their uninflammable part as well as their phlogiston have a disposition to unite with air, *aërescent bodies*. The metals are supposed to consist of peculiar earths or acids with phlogiston.

5. WATER is a colourless, insipid body; which has a disposition to unite with salts and some airs, and thus forms mineral waters.

6. AIRS are invisible fluids, of indefinite elasticity, retaining their aerial form in any degree of cold yet known. Except two, called *pure* and *impure*, both ingredients of the atmosphere, they all seem to be acid, alkaline, or inflammable. The pure air supports life much longer, and promotes inflammation much more, than common or atmospheric air: it is also called *empyreal*, *aphlogistic*, *dephlogisticated*, *vital*, *fire air*, *air eminently respirable*, principle of acidity; and is supposed to be *dephlogisticated water*. The impure air, like all the rest, except pure and atmospheric air, destroys life and flame; and is also called *noxious*, *foul*, *corrupted*, *phlogisticated air*, or *atmospheric mephitic*.

The Operations by which permanent effects are produced on the different kinds of matter, are,

I. Composition: *syn.* Mixture, combination, union, solution. As chemical attraction does not take place at any sensible distance, attention is necessary to diminish cohesion in solids, to approximate the particles of the ingredients, and to multiply their points of contact.

Bodies minutely divided, as in the state of vapour or air, refusing to unite, have no attraction; liquids refusing, have little; but a liquid uniting with a solid or air, shows a great attraction.

The general effects of chemical union are, 1. Condensation, consequently increase of specific gravity. 2. Heat, except it be absorbed by the production of liquidity or vapour. 3. Change of form, solids becoming fluids, and fluids becoming solids. 4. Extreme division of parts. 5. Change of colour. 6. Diminished attraction for other bodies; hence the more simple a body is, the stronger and more numerous are its attractions. 7. Alteration with regard to the effects of heat and other kinds of matter. 8. Different appearance on being mixed with other bodies. 9. Alteration of effects on the human body.

II. Decomposition: *syn.* Separation, as open evaporation; close evaporation, that is, distillation or sublimation; precipitation.

Besides the general heads of Composition and Decomposition, another seems necessary; as in the operations of the calcination and reduction of metals, and vitrification, there seems to be something parted with and something received. This head may be called Reciprocation.

As chemical attraction seems to dispose matter to unite with one kind rather than with another; by which a body added attracts an ingredient from a compound, thereby producing a new compound; and a compound changes ingredients with another compound, thereby producing two new compounds; the former is called a *single* elective attraction, and the latter a *double* one, as exhibited in the Tables. The supposed anomalies in the order of attractions were chiefly owing to overlooking the influence of heat, phlogiston, air, or water, as ingredients, the union of three of the ingredients, the solubility of some of them, or the excess of acid in some of the compound salts.

The most simple kinds of matter seem to be, 1. Heat. 2. Light, 3. Phlogiston. 4. Electrical fluid. 5. Magnetical fluid. 6. Pure air *. Those considered as next in simplicity, are, the acids, the alkalis, the earths, and water.

The different kinds of matter are rarely found pure in nature. They differ from one another in their origin, sensible qualities, chemical attractions, and the compounds which they form.

ACIDS.

Acids have a sour taste; redden certain vegetable blues; unite with alkalis, earths, inflammables, or metals; by which union the ingredients may lose their distinguishing qualities, the compound being then said to be neutral. The acids seem to contain pure air. They owe their liquid state to water, and their colour and volatility probably to phlogiston; for both which they, in general, have a powerful attraction. The mineral acids burn animal and vegetable bodies like fire. Diluted with 40 or 50 times their weight of water, they are as active as the other acids. The vegetable and animal acids possess the general properties of acids in a much inferior degree; they contain oily and slimy matter, and are totally destroyed by a red heat. Acids, as articles of the materia medica, dissolve, at least out of the body, some animal concretions, neutralise the taste of bitters, correct vegetable poisons; seem to be locally stimulant and astringent; and are employed to obviate weakness, relaxation, spasm, acidity, putrescence, heat, thirst, sweat, hemorrhagy, chronic eruptions, increased discharges, the ill condition of certain ulcers. They occasionally increase the secretions, according to the dose and temperature of the patient. The vegetable acids are applied in external inflammation; and acid juices are used internally in active inflammatory and hemorrhagic states. Acid vapours are employed as antidotes to contagion. Acids render the stomach less capable of being acted on by other matters, as spirits, &c. They are sometimes observed to excite cough and spasms. Their administration requires only dilution with water, which may also be sweetened.

1. *Acid of Vitriol*: syn. Vitriolic acid, oil of vitriol, acid of sulphur, sulphureous acid, acid of alum, aluminous acid; aerial, ethereal; primogenial, universal or catholic acid; acidum calcanthi, acidum vagum fossile. In its concrete state, it is called glacial or icy oil of vitriol; in its ordinary strong state, that is, when about double the weight of water, the epithet *strong* or *concentrated* is often added; and in a more diluted state, that is, with about seven waters, it is called weak vitriolic acid, spirit of vitriol, or spirit of sulphur by the bell. Its vaporific point when pure, is about 550° of heat. United with a certain proportion of phlogiston, it may exist in the form of vitriolic acid air; and this, combined with water, forms the volatile vitriolic or sulphureous acid. Saturated with phlogiston, it forms sulphur. It has a considerable attraction for phlogiston.

b 2

2. *Acid*

* Some, however, consider heat and light as different compounds of pure air and phlogiston; while others, denying the existence of phlogiston, consider pure air as consisting of heat and a certain matter which phlogistic bodies are disposed to absorb. Others, again, consider the five first as mere modifications of one another.

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2. *Acid of Nitre*; syn. Nitrous acid, smoking acid, or spirit of nitre, smoking nitrous acid, Glauber's spirit of nitre. Diluted, it is called single aquafortis. It exists in form of nitrous and nitrous acid air. It has a remarkable attraction for phlogiston.

3. *Acid of Salt*; syn. Acid of muria, muriatic or marine acid, spirit of salt, acid or spirit of sea-salt, Glauber's spirit of sea-salt, spirit of sal gem, acid spirit of sal ammoniac. It exists in form of marine acid air. It seems to contain so much phlogiston that it has little attraction for it. It is dephlogisticated by black calx of manganese, calx of arsenic, acid of ni re, &c. These are the three chief mineral acids.

4. *Acid of Tartar*; syn. Tartareous acid, spirit of tartar.

5. *Acid of Vinegar*; syn. Spirit of vinegar or of verdegria, radical vinegar, acetous acid. It exists in form of acetous air.

Vinegar is a product of fermentation; a process by which dead organic matter, exposed to air, moisture, and a heat at least above 32° , is decomposed, and in the case of sweet matter produces successively alcohol, vinegar, and volatile alkali, with a respective ferment in each stage. These stages are called the vinous or spirituous, the acetous, and the putrefactive. The ferment in the first stage seems to be acid of chalk.

6. *Acid of Borax*; syn. Sedative or narcotic salt of Homberg, Boracic acid.

7. *Acid of Chalk*; syn. Cretaceous, cretous, calcareous, chalky, aerial, or mephitic acid, air or gas; fixt, fixable air or gas, gas sylvestre, deadly or choak damp. Water combined with it is called mephitic or acidulous water, or spirit of chalk.

The acid and alkaline airs are readily absorbable by water, and are considered as the vapours of the acids volatilised by phlogiston.

8. The other acids are, 1. *Aqua regia. 2. Acid of amber. 3. Acid of benzoïn. 4. *Acid of sugar. 5. *Acid of milk. 6. *Acid of sugar of milk. 7. Acid of lemons. 8. Acid of tamarinds. 9. Acid of sorrel. 10. *Acid of fat. 11. *Acid of ants. 12. *Acid of arsenic. 13. *Acid of fluor or spar. 14. *Acid of phosphorus. 15. *Acidum perlatum. 16. *Acid of Prussian blue. 17. Acid of tungstein.

Perhaps the acid principle is the same in all acids, and they differ from one another only in their proportions of pure air and phlogiston.

ALKALIS.

ALKALIS, whether the *saline* or *earthy*, have many properties in common. They are found united with the acid of chalk, they have much the same appearance, they green vegetable blues, unite with acids, are fluxes to the stony earths, and render oil or sulphur miscible with water. The earthy are much less soluble in water; and, except lime and barytes, have little or no taste. The earthy are deprived of their acid by heat, the saline require another attracting substance, as lime. The saline ones and lime, when pure, are corrosive, aquescent, and act on the metals

These marked * thus are not used in medicine.

in some measure like the acids. They dissolve animal concretions and mucus, are said to correct animal poisons, and out of the body they obviate putrescence. The earthy alkalis, if mild, whether with or without their acid, and common salt when in a small proportion, seem the only particular substances that promote putrefaction. When diluted, they are used externally in chronic eruptions, to stimulate the inactive vessels in foul ulcers, and in the form of injection to destroy ascarides. Some use them internally in scrophula. The saline ones increase the discharges by the skin, kidneys, and intestines, according to the dose and patient's temperature: the volatile alkali is used as a rubefacient; and its odour to excite the living principle; and likewise internally to stimulate and to obviate spasm and torpor. Lime-water is used as a tonic and astringent, as in dyspepsia, intermittents, and increased discharges. The other alkaline earths seem merely to absorb moisture and acid; and magnesia meeting with acid in the stomach, purges. The use of the alkalis cannot be long continued without injuring the stomach and constitution. The saline ones may be given diluted, or with some conserve in form of bolus; and the mild earthy ones suspended in water by gum.

SALINE ALKALIS; syn. Alkaline or antacid salts.

1. *Vegetable Alkali*: syn. Pure, caustic vegetable alkali, or alkali of tartar; caustic, infernal, or septic stone, potential cautery, common caustic. Dissolved in water, it is called caustic ley.

Aërated Vegetable Alkali: syn. Common or mild vegetable alkali; fixt nitre; salt of tartar; the impure, as that of wormwood, of plants, of woods, &c. potash, pearl-ash, cashub, morcost ashes, black or white flux. Dissolved in water, it is called oil of tartar per deliquium, liquor of fixt alkali or of fixt nitre, ley of tartar. It contains 20 parts of pure acid, 48 of pure alkali, and 32 of water in the hundred, and is soluble in 4 waters at 60° of Fahrenheit's scale. Its crystals are permanent.

2. *Mineral Alkali*: syn. Pure or caustic, mineral, marine, or fossile alkali, soda, alkali of salt. Dissolved in water, it is called soap ley.

Aërated Mineral Alkali: syn. Common or mild mineral or fossile alkali, soda, or salt of soda, barilla, kelp, mural natron, aphronitrum, the nitre of the ancients, Egyptian nitre. It contains 16 of acid, 20 of alkali, and 64 of water; is soluble in two waters. Its crystals are deaquescent.

3. *Volatile Alkali*: syn. Pure or caustic volatile alkali, alkali of bones, or oscoli. Combined with water, it is called caustic volatile spirit, spirit of sal ammoniac prepared by quicklime. It exists in form of alkaline air, which is capable of decomposition.

Aërated Volatile alkali: syn. Common mild concrete volatile alkali, salt of urine, volatile alkali, or salt of sal ammoniac, volatile sal ammoniac, salt of foot, of hartshorn, volatile salt of bones, of ivory, of elkshoof, of vipers, of earth-worms, &c. It contains 45 of acid, 43 of alkali, and 12 of water. Dissolved in water, it is called mild spirit of sal ammoniac, of hartshorn, &c.

This last is called volatile, as it exhales in the common temperature of the atmosphere. The epithet *fixed* is often added to the names of the other two, as they require a great degree of heat to convert them into vapour.

EARTHY ALKALIS; syn. Alkaline, absorbent, antacid earths.

1. * *Barytes*: syn. Pure ponderous, or heavy earth. Soluble in 900 waters at 60°; spec. grav. 4.

Aërated Barytes.

2. *Lime*: syn. Pure, calcined, burnt, caustic limestone, chalk, calcareous earth; quicklime. Soluble in 680 waters at 60°; spec. grav. 2.3.

Aërated Lime: syn. Mild calcareous earth, as limestone, chalk, marble, marle, gur; animal shells and concretions, as oyster-shells; various spars, petrifications, &c. It often contains 40 of acid.

3. *Magnesia*: syn. Pure, muriatic earth, or calcined magnesia. Soluble in 7692 waters at 60°; spec. grav. 2.33.

Aërated Magnesia; syn. Common magnesia, magnesia of nitre, of common salt, Count de Palma's powder, Valentini's laxative polychrest. It often contains $\frac{1}{3}$ of acid.

4. *Clay*; syn. Pure clay, argillaceous earth, earth of alum: As insoluble as magnesia. Bole, as French bole, is an impure clay; spec. grav. 2.

Aërated Clay.

5. The other primitive earth is the *Flinty*; syn. siliceous, crystalline, vitrescent, or vitrifiable; which is soluble in no acid but that of spar. Sp. gr. 2.66.

The volatile alkali seems naturally to contain phlogiston. All the three are alterable by certain phlogistic matters, and then said to be phlogisticated; the two fixt by such means yield volatile alkali. Perhaps the alkaline principle is the same in all the alkaline substances, and they differ from one another only in the proportions of earthy matter and phlogiston. The alkalis, in their ordinary aërated state, might, to preserve analogy, and distinguish their acid and its proportion, be called subcrétised.

SALINE SALTS.

THE stronger in attraction the simple salts are, the more easily do they seem to be saturated. The saline salts may be produced, 1. By mixing the ingredients to the point of saturation; and in the case of perfect neutrals, till the distinguishing qualities of the ingredients are lost. 2. By adding the acid to a compound containing the alkali. 3. By adding the alkali to a compound containing the acid. 4. By a double elective attraction. This applies in some measure to all compound salts.

The saline and earthy salts increase the discharges by the skin, the kidneys, and intestines, according to the dose and patient's temperature; are used chiefly in active inflammatory and hemorrhagic states, but sometimes with

with the view of carrying off effused water or acrimony. Saline salts are rendered more active by large dilutions; and more grateful by sugar, lemon-juice, and an aromatic. Alum is chiefly used as an astringent.

1. *Vitriolated Vegetable Alkali*; syn. Vitriolated nitre or tartar, Glaſer's ſal polychreſt, arcanum duplicatum, ſal enixum de duobus. It contains 40 of acid, 52 of alkali, and 18 of water; ſoluble in 5 waters at 212°, and in 16 at 60°. Its cryſtals are ſubaquated and permanent; taſte bitteriſh.
2. *Vitriolated Mineral Alkali*; ſyn. Glauber's purging or wonderful ſalt, vitriolated ſoda. It contains 27 of acid, 15 of alkali, and 58 of water; ſoluble in four-fifths its weight of water at 212°, in 3 at 60°, by heat in its own water, is deaqueſcent; loſing in both caſes above one half its weight. Taſte cool and bitteriſh.
3. *Nitrated Vegetable Alkali*; ſyn. Nitre, ſaltpetre, prismatic nitre, ſal prunel, mineral cryſtal. It contains 33 of acid, 49 of alkali, and 18 of water; ſoluble in one water at 212°, and in 7 at 60°; cryſtals permanent. Taſte cool, acrid, and bitteriſh.
4. *Muriated Vegetable Alkali*; ſyn. Digestive ſalt, Sylvius's febrifuge ſalt, regenerated ſea-ſalt, ſpiritus ſalis mariini coagulatus. It contains 31 of acid, 51 of alkali, and 8 of water; ſoluble in 2 waters at 212°, and in 3 at 60°. Cryſtals permanent and ſubaquated. Taſte ſalt and acrid.
5. *Muriated Mineral Alkali*; ſyn. Salited foſſile alkali; ſea, fountain, mountain, foſſile, marine, or common ſalt; ſal gem. It contains 52 of acid, 42 of alkali, and 6 of water. Soluble in 2½ waters at 212°, and in a little more at 60°. Cryſtals permanent and ſubaquated. Taſte ſalt and agreeable.
6. *Muriated Volatile Alkali*; ſyn. Crude, common, or ſimply ſal ammoniac, armoniac, armeniac, cyrenaic; ſalt of ſand, flowers of ſal ammoniac. It contains 52 of acid, 40 of alkali, and 8 of water; ſoluble in one water at 212°, and in 3½ at 60°. Cryſtals permanent. Taſte acrid.
7. *Supertartariſed Vegetable Alkali*; ſyn. Cryſtals or cream of tartar, pure tartar. Tartar, in its impure ſtate, is called crude, red or white tartar, argol, or wineſtone. It contains about one-fourth its weight of alkali; ſoluble in 28 waters at 212°, and in 150 at 60°. Cryſtals permanent. Taſte acid. The exceſs of acid in compound ſalts adheres leſs firmly than the neutraliſing portion.
8. *Tartariſed Vegetable Alkali*; ſyn. Tartariſed tartar, ſoluble tartar, vegetable ſalt. Soluble in 4 waters at 60°; aqueſcent; taſte bitter.
9. *Tartariſed Fixed Alkali*; ſyn. Rochelle ſalt, Seignette's polycreſt ſalt, tartariſed ſoda. It contains more than one-fourth of mineral alkali, leſs than one-fourth of vegetable alkali; ſoluble in 4 waters at 60°; deaqueſcent.
10. *Acetated Vegetable Alkali*, ſyn. diuretic ſalt, regenerated tartar, terra foliata tartari. It contains 19 of acid, 32 of alkali, and 49 of water; is very aqueſcent.
11. *Acetated Volatile Alkali*; ſyn. Mindererus's ſpirit, vegetable ammoniac. Very aqueſcent.
12. *Sub-boraxated Mineral Alkali*; ſyn. borax, tincal, cryſocolla. It contains

- tains 34 of acid, 17 of alkali, and 47 of water; soluble in 6 waters at 212° , and in 12 at 60° ; soluble by heat in its own water; and somewhat deaquescent.
13. *Lemonated Vegetable Alkali*; syn. Saline or anti-emetic mixture.

EARTHY SALTS.

1. *Vitriolated Barytes*, syn. Ponderous spar or gypsum, Bononian stone, baroselenite, marmor metallicum. Not soluble in 1000 waters at 212° .
2. *Vitriolated Lime*; syn. Gypsum, selenite, plaster of Paris. Soluble in 500 waters at 60° .
3. *Vitriolated Magnesia*; syn. Bitter salt, bitter purging salt; English, Epsom, Sedlitz or Seidschutz salt. It contains 33 of acid, 19 of magnesia, and 48 of water; soluble in two-thirds of water at 212° , and in one water at 60° ; soluble by heat in its own water; deaquescent; losing, in both cases, one half its weight. Taste cool and very bitter.
4. *Supervitriolated Clay*; syn. Alum. It contains 38 of acid, 18 of clay, 44 of water; soluble in two-thirds of water at 212° , and in 15 at 60° . Crystals permanent; soluble by heat in their own water, and lose one half their weight.

Glutinous substances, whether insipid or sweet, are, like the salts, soluble in water; suspend oil and heavier matters in water; are rendered miscible in spirit by essential oil or resin; defend from acrimony, and the sweets render other medicines agreeable. Glutinous substances, when pure, may be diluted; or sweetened in form of lozenge.

The *insipid* are—*Gummi Arabicum*, *Gummi Tragacanthæ*, *Althea*, *Linum*, *Malva*, *Convallaria*, *Lilium album*, *Satyrium*, *Lichen*, *Parietaria*, *Trichomanes*, *Fœnum Græcum*.—The *sweet* are—*Saccharum*, *Manna*, *Mel*, *Glycyrrhiza*, *Prunus Gallica*, *Uvæ passæ majores et minores*, *Carica*, *Cassia fistularis*, *Ginseng*.

INFLAMMABLE BODIES.

HEAT, from whatever source, as from condensation, the sun, electricity, chemical union, fermentation, animals, friction or percussion, or phlogistic bodies, has the following general effects: Calcification; rarefaction, as expansion, fluidity and vapour; ignition; and, with regard to phlogistic bodies exposed to the air, inflammation, or combustion. The heat and phenomena of this last may be from the double chemical union and condensation which take place, viz. the union betwixt the elementary bodies pure air and phlogiston, and betwixt pure air and the residuum. The heat of fermentation and of animals may be explained in a similar manner.

I. *Inflammable Air*; syn. Fire-damp.

II. *Alcohol*; syn. Ardent spirits, rectified spirit, spirit of wine, vinous spirit, pure spirit. It means a spirit free from all water, except what enters

enters its composition as an ingredient. When its specific gravity is to water as 13 to 12, it is called rectified spirit. This diluted with an equal weight of water, is called a proof-spirit, a brandy, weak spirit of wine. It is miscible with water in any proportion. Its vaporific and inflammable point is 174° . Its strength is judged of by its partial or entire inflammability, levity, and fluidity. When pure, it is the same from whatever fermented liquor it is distilled. Its ingredients seem to be water, acid, and a subtile oil containing its phlogiston. It dissolves the saline alkalis, and more or less of the following compound salts, most of the ammoniacal salts, acetated vegetable alkali, nitrated and muriated lime and magnesia, supervitriolated iron somewhat dephlogistated, supermuriated mercury. It does not dissolve the vitriolic compounds. It is stimulant and intoxicating. Its compounds are,

1. *Vitriolic Æthereal Liquor*; syn. Vitriolic æther, *vitriolo-cohol*. Stimulant.
2. *Dulcified Spirit*: syn. *Alcoholised acids or alkalis*; as *sweet spirit of vitriol*, syn. vinous vitriolic acid, *alcoholised acid of vitriol*. Stimulant.
3. *Sweet Spirit of Nitre*; syn. Vinous nitrous acid, *alcoholised acid of nitre*. Stimulant.
4. *Sweet Spirit of Salt*; syn. Vinous muriatic acid, *alcoholised acid of salt*. Stimulant.
5. *Sweet Spirit of Sal Ammoniac*; syn. *Alcoholised volatile alkali*. Stimulant.

Oily Substances, whether the unctuous, essential, or fossil, seem to owe their origin to organic matter, to consist of phlogiston, acid of chalk, and water; and show little disposition to unite with water.

III. *The unctuous**: syn. Unguinous, expressed, bland; fat; grease. They feel slippery, inodorous, insipid; rise at 600° ; form soap with alkali, plaster with metallic earth; evolve acid, or become rancid on keeping; and are only soluble in alcohol when rancid, distilled, that is, empyreumatic, or separated from soap or plaster by acid. They defend from acrimony, and relax. Their compounds are,

1. *Soap*; syn. *alkalised oil*.
2. *Balsam of Sulphur*; syn. *sulphurated oil*.

IV. *Essential Oil*†: syn. Aromatic oil; balsam, resin. The balsams and resins differ from the oils chiefly in consistence. This oil feels less slippery

* The unctuous substances are, *Amygdalæ amaræ et dulces, olivæ, laurus, palma, sebum ovile, axungia porcina, spermaceti, cera alba, vipera*. Unctuous oil may be given mixed with water in form of emulsion or mixture, by means of gum or volatile alkali; or with mucilage in form of linctus. The external applications differ chiefly in consistence. The liniment consists of one part of wax and four of oil; the ointment, of one of wax and two and a half of oil; the cerate, of one of wax and about two of oil, with one-eighth of spermaceti. These serve to keep parts soft and from the air. The plaster consists of oil and calx of lead; and serves to keep parts firm, and retain dressings. With these, substances supposed useful may be mixed.

perly than the unctuous, has a strong odour, pungent taste; rises at 212° , or less; soluble in alcohol; generally lighter than water. Stimulant.

V. *Fossil*

† In this, in a gummy or saline matter, reside those sensible qualities by which the following medicines are arranged. They are not used in active inflammatory or hemorrhagic states of the system, except when the evacuation they occasion may compensate any bad effects from their stimulus. In general, they vary in their quantity of inert and active matters. Their active matter, dissolved in form of expressed juice, infusion, or tincture, or freed from the solvent, without an injuring heat, in form of extract, is their most certain state †. The less disagreeable ones, however, are often given simply divided, diffused in liquid, or suspended by gum in form of a mixture, or inviscated in form of electary, bolus, or pill. The form of pill rendered soluble by gum or extract of liquorice, is, in general, best; as, except in infancy or difficult deglutition, it is easily swallowed, it covers any disagreeable taste, confines the active matter; and from its slowness of solubility, and as it can be longest continued without disgust, it is particularly suited to active medicines and chronic complaints, in which these medicines are chiefly used.

Acrids excite local heat, pain, and blisters, and increase secretion. They are given internally to increase secretion; and some are chiefly used as emetic, cathartic; or anthelmintic. *Cantharides*; arum, rhododendron; urtica, millipedæ; pyrethrum, pimpinella; asarum, hippocastanum; dolichos, spigelia, filix mas, Geoffræa; *sinapi album*, cochlearia, nasturtium aquaticum, raphanus rusticus, cardamine; flammula Jovis, meze-reon, farsparilla, bardana, lobelia syphilitica, pulsatilla nigricans; *scilla*, *allium*, colchicum, cinara, digitalis; iris palustris, seneka, sambucus, bryonia, melampodium, veratrum, gambogia, scammonium, *jalapa*, *seena*, *ricinus*, *ipecacuanha*.

Astringents excite a sense of roughness in the mouth, and form ink with a solution of iron. They constrict the animal fibre, and are given to obviate weakness, increased discharges, and putrescence. Catechu, kino, bistorta, uva ursi, quercus, gallæ, agaricus, lignum Campechense, granata malus, cydonia malus, tormentilla, rosa rubra, plantago, hydrolapathum, ulmus, tussilago, verbascum, scolopendrium; *rheum*.

Bitters are given to obviate weakness, morbid acid, worms, and putrescence. Some are chiefly used as cathartic. *Gentiana*, curfuta, quassia, simarouba, radix indica Lopeziana, *columbo*, *cortex Peruvianus**, *salix*, *chamamelum*, artemisia, absinthium, abrotanum, centaureum minus, carduus benedictus, santonicum, tanacetum, taraxacum, menyantes, fumaria, marrubium, rubia, dulcamara, dictamnus albus, scordium, genista, gratiola, elaterium, rhamnus catharticus, colocynthis, *aloe foccotorina*, *aloe hepatica*.

Odorous

† It might be of use to distinguish the solvent of the substance; as by the terms aquated, cohobated, aquacohobated; and the extract, by the terms deaquated, decohobated, deaquacohobated.

* The articles of *Cortex Peruvianus* and *Opium* in the Dispensatory belong to this Syllabus.

- V. *Fossil Oil*, syn. *Naptha*, is a light, volatile, fragrant, penetrating oil, not soluble in alcohol, but unites with some essential oils. Its impure kinds are, Petroleum, or rock oil; mineral pitch, Barbadoes tar, or devil's dung; * asphaltum, Jews pitch, or mamia mineralis; * jet; amber; * fossil or pit coal: and are called bitumens. Stimulant.
- VI. *Animal Oil*, syn. Dipellius's oil, is an empyreumatic oil, distilled chiefly from the glutinous parts of animals, and rectified by gentle distillations into a light, volatile, odorous, penetrating oil, containing volatile alkali. Stimulant.
- VII. *Sulphur*; syn. Brimstone, mineral sulphur, flowers of sulphur. It is idioelectric, insoluble in water, has little taste or smell till heated; its specific gravity about 2; rises at 170° , melts at 185° , and flames at 302° ; contains of acid 60, of phlogiston 40 *per cent.* It is laxative and antipforic. Its compound is,
Liver of Sulphur; syn. hepatic sulphur, *sulphur-cali*; hence hepatic or *sulphur-caline air*; an antidote to mineral poisons, and is used externally in chronic eruptions.
- VIII. *Phosphorus*, a kind of very inflammable sulphur, consisting of acid of bones and phlogiston.
- IX. * *Charcoal*: syn. Charred vegetables, as charred linen or tinder; charred pit-

Odorous substances are subdivided into aromatics and fetids, between which it is not easy to draw the line of distinction.—The odorous principle, in a moderate degree, stimulates, refreshes, and strengthens; in a certain greater degree, its stimulus is so considerable and quickly diffusive, that it has the appearance of being entirely and directly sedative. Aromatics render other medicines agreeable, and are grateful stimulants in cases of weakness, spasm, or flatus; but cannot be so long continued as the fetids, nor are they so important medicines. The fetids are much used in states of weakness attended with spasm, flatus, pain, watchfulness, and bad ulcers.

Aromatics. *Cinnamomum*, cassia lignea, canella alba, cascarilla, santalum citrinum, sassafras, zedoaria, acorus, aristolochia, iris Florentina, enula campana, contrayerva, serpentaria virginiana, *zingiber*, curcuma; pimento, cubebæ; piper longum, nigrum et indicum caryophilli aromatici et rubri, nux moschata, limonia mala, aurantia Hispalensis, Junipetus; *anisum*, fœniculum dulce et vulgare, anethum, coriandrum, carvi, cardamomum minus, cuminum, petroselinum, Daucus sylvestris, angelica sativa et sylvestris, ligusticum, imperatoria, mentha sativa et *piperitis*, melissa, millefolium, pulegium, hederæ terrestris, hyssopus, salvia, majorana, thymus, ferpyllum, *lavendula*, rosmarinus, rosa pallida, arnica; terebinthina veneta balsamum Canadense, Gileadense, copaibæ, peruvianum, tolutanum; benzoinum, mastiche, styrax calamita, *storax liquida*; olibanum, myrrha.

Fetids. Gummi ammoniacum, sagapenum, galbanum, *asa fetida*, *camphora*, *moschus*, castoreum, *guaiacum*, valeriana sylvestris, sabina, atriplex fetida, ruta. The narcotic fetids are, *Opium*, cicuta, hyoscyamus, belladonna, aconitum, stramonium.

Colorants are such substances as are used for giving colour to medicines. Sanguis draconis, anchusa, coccinella, rosa rubra, caryophilli rubri, viola.

pit-coal, as coaks or cinders; animal charcoal, as charred ox-blood; charred oil, as lamp-black. These part with their phlogiston in the order in which they stand. It consists of phlogiston, earth, acid of chalk, and alkali. It is used for fuel and for phlogisticating other matters. The earth of vegetables, whether from putrefaction or combustion, is either lime, or a mixture of all kinds, often with iron and manganese, the vitriolated and muriated fixt alkalis, vitriolated and phosphorated lime, and liver of sulphur. The earth of the shells of fish and eggs is lime; oyster-shells contain some vitriolated lime; the earth of bones, horns, claws, &c. is phosphorated lime.

METALS.

THE Metals are found sometimes native, with their entire complement of phlogiston; or mineralised in the form of ore, that is, more or less de-phlogisticated by their union with sulphur, arsenic, acid of chalk, sometimes of vitriol, and of salt, and even of phosphorus.

They are malleable in the following order; Gold, silver, copper, iron, tin, lead, mercury, and zinc: tenacious in the following order; Gold, iron, copper, silver, tin, and lead. Bismuth, antimony, and arsenic, have a foliated texture; the rest are of a granulated one. Metals by hammering are apt to harden; and by applying heat, and cooling slowly, the particles are separated, and allow a new approximation. Metals exposed to heat and air, burn; some emitting flame, as zinc, iron, copper, silver, tin, lead, antimony, gold, and arsenic: And all, except the perfect metals, part with phlogiston; perhaps absorb pure air, seemingly changing it partly into acid of chalk; diminish in specific, but increase in absolute weight; lose their splendor, ductility, opacity, fusibility, volatility, solubility in acids, power of being reduced, their disposition to unite even with their own metals, their power of conducting electricity, their activity on the human system: they assume the appearance of earths called calces, of different colours, as grey, brown, glassy, red, white; some becoming soluble in water, or even converted into acid. The process is called Calcination.

Iron, which is found in almost every part of nature, is the only metal seemingly friendly to the human system: the rest are either inert, or more or less deleterious; and their use cannot be continued long with safety. They are administered, 1. In the state of regulus, or metal simply divided. 2. Calcined, by heat and air, or by nitre, as the calces; or by acids, as the precipitates. 3. Saline preparations. And, 4. Combined with sulphur.

Zinc, specific gravity $7\frac{1}{8}$; melts, inflames, and rises at 700° ; bluish.

Iron 8, 1695° ; bluish; capable of welding; magnetic.

Manganese $6\frac{2}{3}$; bluish.

Cobalt $7\frac{7}{8}$; bluish.

Nickel 9; whitish red; magnetic.

Lead $11\frac{1}{8}$; 585° ; bluish.

Tin $7\frac{7}{8}$; 408° ; white.

Copper 9; 1410° ; pale-red; volatile.

Bismuth

Bismuth $9\frac{1}{2}$; 460° ; whitish-red.
Antimony $6\frac{1}{8}$; 809° ; rises, white.
Arsenic $8\frac{1}{5}$; bluish; volatile.
Mercury 14; congeals at 40° below 0° ; boils at 600° ; white.
Silver 11; 1000° ; white.
Gold $19\frac{1}{2}$; yellow.
Platina 23; white.
Tungstein metal.

METALS calcined by Heat and Air; syn. Calces, dephlogisticated Metals.

1. *Calcined Zinc*; syn. Calx of zinc, flowers of zinc, philosophical wool.
2. *Subcalcined Iron*; syn. Scales of iron.
3. *Red Lead*; syn. *Red calcined lead*.
4. *Litharge*; syn. *Subvitrified lead*.
5. *Grey Calx of Antimony*.
6. *Nitrated Calx of Antimony*; syn. James's powder, *nitro-recalcined antimony*.
7. *Glass of Antimony*; syn. *Vitrified antimony*.
8. *Crocus of Antimony*; syn. Crocus of metals, *red nitro-calcined antimony*.
9. *Calcined Mercury*; syn. Mercury precipitated by itself.

Metallic SALTS.

ACID of nitre is the most powerful solvent of the metals: its action requires sometimes to be moderated, or the metal is apt to separate. The acid of vitriol requires even a boiling heat to attack mercury or silver. The acid of salt has still less disposition to unite with them; but when dephlogisticated, it dissolves all metals completely. To metals dephlogisticated as by the other acids, it shows a stronger attraction, even in its ordinary state, by taking the metals from them.

The other acids are in general weaker in solvent power.

Metals dephlogisticated to a certain degree are soluble both in acids and alkalis.

Metals cannot unite with acids without losing their phlogiston so far as to be in the state of calces; nor can they remain united if they lose more, which metallic solutions are very apt to do by exposure to the air. Perfect solutions are transparent, and tinged with the proper colour of the calx. The colour seems to vary according to the quantity of phlogiston present; and by a sufficient quantity, all colour is sometimes destroyed.

The causticity that is in some of the metallic salts seems to be owing to their attraction for phlogiston.

Precipitates retain some of the solvent and of the precipitant, from which they can hardly, if at all, be freed. Precipitates by mild fixt alkalis, carry down acid of chalk and water; and by volatile alkali, phlogiston.

INTRODUCTION.

1. *Vitriolated Zinc*; syn. White vitriol or copperas, vitriol of zinc or of Goslar; it contains 12 of acid, 20 of zinc, and 58 of water; soluble in two waters at 60°.
 2. *Super-vitriolated Iron*; syn. Green vitriol or copperas, salt or vitriol of iron, of steel, or of Mars; recently crystallised, contains 20 of acid, 25 of iron, and 55 of water; soluble in 6 waters at 60°.
 3. *Super-vitriolated Copper*; syn. Blue, Roman, Cyprus vitriol or copperas; contains 30 of acid, 27 of copper, and 34 of water; soluble in 4 waters at 60°.
 4. *Super-vitriolated Mercury*; syn. Vitriol of mercury; contains 19 of acid.
 5. *Super-nitrated Mercury*; syn. Nitre of mercury; contains 28 of acid.
 6. *Super-nitrated Silver*; syn. Salt of silver, lunar caustic or cathartic; contains 36 of acid.
 7. *Super-muriated Antimony*; syn. Butter or caustic of antimony.
 8. *Super-muriated Mercury*; syn. Corrosive sublimate Mercury; contains 16 of acid, 77 of mercury, and 6 of water; not decomposable by heat; crystals permanent; soluble in 19 waters at 60°, and in alcohol; unites with muriated volatile alkali, which renders it remarkably soluble.
 9. *Super-tartarised Antimony*; syn. Emetic tartar; soluble in 3 waters at 60°.
 10. *Super-acetated Lead*; syn. Salt or fugar of lead, or of saturn; soluble in 3 waters at 60°.
- Ammoniacal Copper and Ammoniacal Iron, or Martial Flowers, contain metal, volatile alkali, and acid.*

Subacidated Metals.

1. *Rust of Iron*; syn. Subcretised, or aerated iron.
2. *Submuriated Mercury*; syn. Sweet mercury sublimate, calomel, aquila alba. It contains 14 of acid and water, and 86 of mercury.
3. *Subacetated Lead*; syn. Cerusse, white lead.
4. *Subacetated Copper*; syn. Verdegris.

Calcined metallic Salts.

1. *White Calcined Vitriol*; syn. Calcined vitriol.
3. *Red Calcined Vitriol*; syn. Colcothar of vitriol.
3. *Calcined Nitrated Mercury*; syn. Red corrosive mercury, red precipitate.

Sulphurated Metals.

1. *Sulphurated Antimony*; syn. Antimony, crude and prepared antimony, ore of antimony.
2. *Sulphurealine Antimony*; syn. Kermes mineral.
3. *Dealcalised Sulphurealine Antimony*; syn. Precipitated sulphur of antimony, golden sulphur of antimony.

4. *Sulphurated*

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4. *Sulphurated Mercury*; syn. Native and factitious cinnabar, ore of mercury, vermillion, *Æthiops mineral*, antimonial *Æthiops*.

W A T E R.

WATER is about 850 times heavier than air; its vapour occupies 1400 times more space than when in a liquid state: like air, it exists in almost every body of nature, and is never found pure.

The chief substances found in water are, Pure, inflammable, and hepatic airs; acid of chalk; the fixt alkalis, vitriolated, muriated, aërated; the vegetable, oftener nitrated; aërated volatile alkali; muriated barytes; lime, and sometimes magaesia, vitriolated, nitrated, and aërated; sometimes clay, super-vitriolated and muriated; iron, vitriolated, muriated, aërated; manganese, muriated; copper, vitriolated; calx of arsenic; petroleum; vegetable and animal putrescent mucilage. Waters are examined by the senses, and by evaporation, during which the volatile and fixt matters are separated, and collected; or by precipitants or tests. The chief of these tests are vegetable blue infusions, as that of red cabbage, for acids and alkalis; a saturated solution of an astringent, as that of gall-nut in spirit of wine, for iron; phlogisticated alkali for the metals; vitriolic acid for barytes; acid of sugar for aërated lime; aërated alkali for magnesia and clay; nitrated silver and muriated barytes for acids united with other substances; alcohol for acidated alkalis; any acid for saline or earthy hepar; &c.

A I R S.

Pure Air, specific gravity 110.

Phlogisticated Air 140.

Acid of Chalk 220.

Common Air 152.

Inflammable Air 10.

Nitrous Air 157.

Marine Acid Air 252.

Vitriolic Acid Air 300.

Alkaline Air 70.

Cases of DOUBLE Elective Attraction.

By WATER.

1.
Phlogisticated iron with
Vitriolated copper,
2.
Acidated earth, or metal, with
Aërated alkali,
3.
Acidated volatile alkali with
Aërated fixt alkali or earth,
4.
Vitriolated alkali, magnesia, or
clay, with
Nitrated, muriated, or acetated
lime,
5.
Vitriolated or muriated alkali
or earth with
Nitrated or acetated lead, mer-
cury, or silver,
6.
Vitriolated, nitrated, or ace-
tated silver, with
Muriated alkali, or earth,
7.
Vitriolated vegetable alkali with
Muriated lime, or lead,
8.
Tartarised or acetated vege-
table alkali, with
Nitrated mercury,
9.
Vitriolated volatile alkali, with
Nitrated, muriated, or acetated
fixt alkali,
10.
Vitriolated, nitrated, or muri-
ated volatile alkali, with
Acetated fixt alkali or lime,
11.
Vitriolated mercury with
Muriated mineral alkali,

1.
Phlogisticated copper and
Vitriolated iron.
2.
Acidated alkali and
Aërated earth or metal.
3.
Acidated fixt alkali or earth and
Aërated volatile alkali.
4.
Vitriolated lime, and
Nitrated, muriated, or ace-
tated alkali, magnesia, or
clay.
5.
Vitriolated or muriated lead,
mercury, or silver, and
Nitrated, or acetated alkali, or
earth.
6.
Give Vitriolated, nitrated, or aceta-
tated alkali, or earth, and
Muriated silver.
7.
Vitriolated lime, or lead, and
Muriated vegetable alkali.
8.
Tartarised or acetated mercury
and
Nitrated vegetable alkali.
9.
Vitriolated fixt alkali, and
Nitrated, muriated, or aceta-
ted volatile alkali.
10.
Vitriolated, nitrated, or muri-
ated fixt alkali or lime, and
Acetated volatile alkali.
11.
Vitriolated mineral alkali and
Muriated mercury.

By HEAT.

1.
Muriated mercury with
Sulphurated antimony,

} Give { 1.
Muriated antimony and
Sulphurated mercury.

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THE NEW DISPENSATORY.

PART I. ELEMENTS of PHARMACY.

CHAPTER I.

A general View of the Properties and Relations of Medicinal Substances.

S E C T. I.

VEGETABLES.

VEGETABLES are organized bodies, furnished with a variety of vessels for the reception, transmission, and perspiration of different fluids. Analogous to animals, they are reproduced from seeds and eggs, and are endowed with functions, whereby the aliment they imbibe is changed into new forms, into solids and fluids, peculiar to particular plants, and to different parts of the same plant.

“The analogy between the vegetable and animal kingdoms will appear still more striking, when we consider that the former exhibit, though in a less degree, all the phenomena of sensibility and motion.

“The *pabulum* of vegetables, like that of most animals, is of a mixed nature; and is made up of the necessary union of water, heat, and light, and less necessarily of air and earth: the office of these two last seems to be that of filters, or vehicles for conveying the other principles in proper form.

“From varieties in the state and proportion of these several agents, a very multiplied diversity takes place in the external form, quantity, and quality of one and the same vegetable: hence the difference of plants from the soil, climate, season, and other like circumstances. The influence of heat and light, or what is probably the same thing, the absorption of the inflammable principle, is perhaps the most important article in the aliment of vegetables. This principle, whether derived from the solar rays, from putrid matters employed in manure, or from

the putrefaction of the wild growth, assisted by calcareous earths and other septics, is found at all times to modify, in a peculiar manner, the form, the quantity, and even the sensible and inherent properties of vegetables: it is of importance however to remark, that the soundness and specific principles of vegetables are not invariably the more complete in proportion to the vigour of their growth; high health, which is always a dangerous state in the constitution of animals, is often the means of perverting or destroying the œconomy of vegetable life. Thus the finer aromatics, which naturally inhabit the dry and sandy soils, when transplanted into a moist and rich one, or, in other words, when placed in mould abounding in the *famites* of inflammable principle, grow with rapidity and vigour, have their bulk considerably increased, but lose very much of their fragrance, as if their active principles were exhausted by the luxuriance of their growth.

“Plants are also found to differ considerably in the different periods of their growth. Thus some herbs in their infancy abound most with odoriferous matter; of which others yield little or none till they have attained to a more advanced age. Many fruits, in their immature state, contain an austere acid juice, which by maturation is changed into a sweet: others, as the orange, are first warm and aromatic, and afterwards by degrees become filled with a strong acid. The common grain, and sundry other seeds, when beginning to vegetate, are in taste remarkable sweet: yet the kernels of certain fruits prove, at the same period, extremely acid. The roots of some of our indigenous plants, whose juice is, during the summer, thin and watery, if wounded early in the spring, yield rich balsamic juices, which, exposed to a gentle warmth, soon concrete into solid gummy-resins, superior to many of those brought from abroad. In open exposures, dry soils, and fair warm seasons, aromatic plants prove stronger and more fragrant, and fetid ones weaker in smell, than in the opposite circumstances. To these particulars therefore due regard ought to be had in the collecting of plants for medicinal uses.

“It may be proper to observe also, that the different parts of one plant are often very different in quality from one another. Thus the bitter herb wormwood rises from an aromatic root; and the narcotic poppy-head includes seeds which have no narcotic power. These differences, though very obvious in the common culinary plants, do not seem to have been sufficiently observed, or attended to, in the medicinal ones.

“Without any obvious dependence on the circumstances above-mentioned, vegetables are also, like animals, obnoxious to diseases and death. These, whether occasioned by paroxysms of intense cold, by insects, lightning, or other causes, always maintain a striking analogy to the affections of animals. A difference however arises from this, that the several parts of vegetables do not constitute such a mutually depending system as those of the more perfect animals: Hence it is, that a very considerable part of a plant shall be diseased or dead, whilst the rest enjoy a perfect integrity of life and health. Though the physiology of vegetables is hitherto insufficient for forming any complete doctrines of the causes and cure of their several diseases; yet it is commendable to have an eye to the formation of a pathology of the vegetable kingdom: in the state even of our present knowledge, it is of importance in the study of pharmacy to be aware that such diseases do really exist, and are capable of changing or destroying the active principles of many of our most valuable herbs. In

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the plants more evidently sensitive, the diseases exhibit a very close proximity to many of those of animals: several of the remote causes are such as are known to obstruct perspiration, to induce general debility, or otherwise disorder the animal œconomy. The diseases also are evidently marked by a diminution of their sensitive and moving principle; and perhaps, in consequence of this, their solids, their sap, and other fluids, shrivel and decay, and the whole plant assumes new forms, is impregnated with inert or fraught with noxious principles. Analogous also to animals, the plant, when deprived of the living principle, runs into all those changes common to what is called inanimate matter. Those changes we next proceed to examine.

I. *Productions from Vegetables by FERMENTATION.*

“FERMENTATION is that spontaneous motion excited in dead vegetables and animals; but which is peculiar to those organic substances elaborated by the principle of vegetable or animal life.

“The circumstances favouring fermentation in general are, a certain degree of fluidity, a certain degree of heat, and the contact of the air.

“There are however several substances, of themselves not susceptible of fermentation, which nevertheless may be brought into it by the admixture of those that are; as by adding to them, along with a proper quantity of water, a portion of the yeast or head thrown up to the surface of fermenting liquors. Without this expedient many vegetables would run immediately into the acetous, and some of them into the putrefactive fermentations. It is also found, that though acetous and putrefactive ferments are unable to stop the vinous fermentation, they are however capable of assimilating the liquor to their own nature in a more perfect form; and hence it is, that in the manufactures of wine, rum, and vinegar, it is found useful to keep the vessels well seasoned with the liquor intended to be prepared. Three different kinds or stages of fermentation have been generally distinguished by chemists. The vinous, which furnishes alcohol, or what is commonly called spirit; the acetous, which affords vinegar; and the putrefactive, which yields volatile alkali. Being pretty constant in succession to each other, the whole process will be best understood by considering each of them apart. All vegetable substances are not capable of the vinous fermentation: the conditions necessary to its production are, a saccharo-mucilaginous matter; a fluidity a little viscous, but the degree of which is best learned from experience; a heat from 40 to 96 of Fahrenheit’s thermometer; a considerable mass of matter; and, lastly, the access of the external air.

“The phenomena exhibited in the vinous fermentation are, a brisk tumultuary motion, the liquor loses its transparency and homogeneous appearance, its bulk and heat are considerably increased, the solid parts are buoyed up to the top, and a great quantity of a permanently elastic fluid is disengaged. This fluid or gas being somewhat heavier than atmospheric air, floats in separate masses next the surface of the liquor; and is from this and other appearances easily distinguished from common air: It extinguishes flame and animal life, precipitates lime from lime-water, crystallises and renders mild the caustic alkalis; and is therefore the gas sylvestre of Helmont, and the fixed air or aerial acid of modern chemists.

After some time the tumultuary motion in the liquor is suddenly checked, perhaps from the generation of the alcohol; a fine lee is also precipitated; and the floating matter, if not purposely prevented, subsides to the bottom of the vessel. In the wines produced from the grape, a large quantity of a saline concrete is likewise incruited on the sides and bottom of the casks; and this is commonly known by the name of tartar, the properties of which we shall afterwards examine. At the termination of these several phenomena, the vegetable matter has assumed new properties; and from being a mild, sweet, or gently acidulous infusion, is now become the brisk pungent, and inebriating liquor, called Wine or Vinous Liquor.

“Fermented or vinous liquors are prepared from a great variety of substances: the saccharine, or those rendered so by a beginning vegetation, are in general fittest for the purpose; a multitude of collateral circumstances are also necessary for the proper management of the process; and in vinous liquors, great diversities are found independent of their being more or less watery. These differences are not only observable in wines produced from different substances, but also in those prepared from one and the same vegetable. These diversities may be referred to the different conditions of the substance to be fermented, to the states of fluidity and heat, and to the degree of fermentation to which the subject has been carried. This last is principally modified by the preceding causes, and not unfrequently by very minute and apparently trifling circumstances in the conduct of the operator. Hence the numberless varieties in the vinous liquors produced from the grape, and which liquors have been more peculiarly denominated *wines*: It is an important part of pharmacy to inquire into these differences with care and attention.

“The diversity in vinous liquors is still more obvious in those produced from different vegetables. Many of the native qualities of the substance, such as colour, taste, flavour, &c. often remain in the wine; not being totally subduable by that degree of fermentation by which the liquor is rendered vinous. Hence the remarkable difference of wines as produced from the grape and those furnished by the graminous feeds: the wine produced from these last has been more strictly called *beer*; and this too is well known to differ as remarkably from those produced from apples, pears, apricots, &c. as these differ from wine properly so called.

1. Of the Product of the Vinous Fermentation.

“THE product of all these fermented vegetables is, as we have just now mentioned, the pungent and intoxicating liquor called wine. It is proper, however, in pharmacy, to inquire into the different principles which enter into its composition as a mixt. As the wine furnished by grapes is of all others the most valuable and generally known, we shall take it for our example. Grape-wine, then, is made up of a large quantity of water, of alcohol, of tartar, and a colouring matter. It is proper, however, that we should lay down the proofs of such a combination in wine, and explain the methods by which it may be decomposed and separated into the constituent parts above mentioned.

“For this purpose, the assistance of the fire is generally had recourse to. The liquor is put into an alembic; and as soon as it boils, a white milky fluid, of a pungent smell and taste, distils into the recipient. This fluid is called *aquavita*, or, in common language, *spirit*: it is compounded of
water

water and certain matters capable of suspension in water, of alcohol, and of a small proportion of oil; which last communicates to it the milky colour: the yellow colour, afterwards assumed, is partly owing to the same oil, and partly to a solution of the extractive matter of the wooden casks in which the aquavitæ has been infused. This aquavitæ, like wine, always partakes more or less of the flavour of the vegetable whence the wine has been prepared; but by farther distillation, and other processes, it is freed of its water, and the native principles of the vegetable matter which the watery parts had kept in solution: when thus prepared, it is a pure *alcohol* or *inflammable spirit*, which is always the same from whatever vegetable the wine was produced. For the properties of this spirit, see *ALCOHOL*.

“After all the aquavitæ has been drawn off, the residuum now ceases to be wine; it is of a chocolate colour, of an acid and austere taste; it has now assumed a heterogeneous appearance, and a great quantity of saline crystals is observed in the liquor; these crystals are the *tartar*. By the above processes, then, we have fully decomposed *wine*: but it is to be observed, that by this analysis we have not separated the different parts of wine in their original and entire state; we are not hitherto acquainted with any method of regenerating the wine by recombining the aquavitæ with the residuum: some product, therefore, of the fermentation is changed or destroyed; and this product is probably some peculiar modification of fixed air or aerial acid. The residuum, when evaporated, assumes the form and consistence of an extract; the colouring part may be abstracted by rectified spirit of wine, but is not separated therefrom by the addition of water: it seems therefore to be of a gum-resinous nature, and extracted from the grape by means of the alcohol generated during the fermentation.

“From this analysis, then, it is obvious, that wine is composed of water, colouring matter, alcohol, and a something that is changed or lost. We refer the particular examination of alcohol and tartar to the proper places assigned them in this work; and we expect that from this general survey of the subject, the properties of wine, as a solvent of several medicinal substances to be afterwards examined, will be much more readily understood. Before we go farther, it is proper also to be informed, that the *ley* precipitated from wine during the fermentation, is a compound of stones, pieces of grape, tartar, and vitriolated tartar: the two first are inert bodies; of the two last we shall inquire particularly in their proper order. We are now prepared to consider the nature and product of the next kind or stage of fermentation, viz, the

2. ACETOUS Fermentation.

“To understand what goes on in the acetous fermentation; we must leave for the present our analysis of the products of the vinous, and return to the wine itself in its most perfect and entire state. It is proper to observe, that though, after the liquor has become vinous, a partial cessation of the more obvious phenomena takes place, yet the wine still suffers a slow and imperceptible degree of fermentation. We are not then to consider the liquor in a quiescent state, being constantly approaching to the next stage, which we are now to consider, viz. the *acetous fermentation*. This kind of insensible fermentation, or what we may call

the intermediate change, seems to be necessary to the perfection of the wine. Its degree, however, is to be regulated under certain limitations; when too much checked, as by cold, thunder, or such like causes, the wine becomes vapid; when too much encouraged by heat, contact of air, &c. it approaches too far to the acetous change: but in order that the vinous shall proceed fully to the acetous fermentation, several circumstances are required; and these are in general the same that were before necessary to the vinous stage. These conditions are, a temperate degree of heat, a quantity of unfermented mucilage, an acid matter, such as tartar, and the free access of external air. When thus situated, the liquor soon passes into the acetous fermentation: but during this stage the phenomena are not so remarkable as in the vinous; the motion of air is now less considerable, a gross unctuous matter separates to the bottom, the liquor loses its vinous taste and flavour, it becomes sour, and on distillation affords no inflammable spirit. It is now the acetous acid or vinegar; and when separated by distillation from the unctuous lee, may be preserved a considerable length of time without undergoing the putrid change: to this last, however, it always approaches less or more, in the same way as the vinous constantly verges to the acetous fermentation; and this will much more readily happen if the acid is allowed to remain with the unctuous feculent matter above mentioned. When thus situated, the vinegar quickly loses its transparency, assumes a blackish colour, has lost its sourness and agreeable odour, has now an offensive taste and smell, and when distilled at a certain period of the process it yields volatile alkali.

The liquor is now arrived to the last stage, viz.

3. The PUTREFACTIVE Fermentation.

“FROM the preceding phenomena, I think it is obvious, that the same substance which is capable of the vinous and acetous, is also capable of the putrefactive fermentation. It is perhaps impossible to induce the first without a mixture of the second; or the second without a mixture of the third. Hence it is that every wine is a little acid; and there are few vinegars without some disposition towards putrefaction, and in which there is not a little volatile alkali, though it is neutralized by the acid which predominates. Notwithstanding this seeming continuation of one and the same process, the putrefaction of vegetables has its particular phenomena. The vegetable matter, if in a fluid state, becomes turbid, and deposits a large quantity of feculent matter: a considerable number of air-bubbles are raised to the top; but the motion of these is not so brisk in the putrefactive as in the vinous, or even the acetous fermentation: neither the bulk nor heat of the liquor seems to be increased; but an acrid pungent vapour is perceived by the smell, and which, by chemical trials, is found to be the volatile alkali; by degrees this pungent odour is changed into one less pungent, but much more nauseous. If we suppose the same train of phenomena to have taken place in a vegetable consisting of somewhat solid parts, its cohesion is now broke down into a soft pulpy mass; this mass, on drying, loses at length its odour entirely, leaving a black, charry-like residuum, containing nothing but earthy and saline substances.

“It is proper to observe, that though the circumstances favouring the putrefactive are the same with those requisite to the vinous and acetous fermentations,

fermentations, yet these several conditions are not so indispensable to the former as to the two latter stages. All vegetables have more or less tendency to putrefaction, and a great number are capable of the acetous fermentation: but the proportion of those capable of the vinous is not considerable; and these last will run into the putrid in circumstances in which they cannot undergo the vinous or even the acetous fermentations. Thus flour made into a soft paste will become sour: but it must be perfectly dissolved in water to make it fit for the vinous stage; whereas mere dampness is sufficient to make it pass to the putrid fermentation: besides the condition of fluidity, a less degree of heat, and a more limited access of air, likewise suffice for producing the putrefactive fermentation.

“It is therefore probable, that all vegetables, in whatever state, are liable to a kind of putrefaction: in wood and other solid parts the change is slow and gradual, but never fails at length to break down their texture and cohesion.

“We formerly observed, that the vapours separated during the vinous fermentation were fixed air or ærial acid; and it is indeed true, that in the incipient state a quantity of this gas is still evolved, and along with it a quantity of alkaline air: in the advanced state, however, we find these vapours of a different nature; they now tarnish silver, and render combinations of lead with the vegetable acids of a black colour. When produced in large quantity, and much confined, as happens in stacks of hay put up wet, they burst into actual flame, consuming the hay to ashes: on other occasions, the escape of these vapours discovers itself by an emission of light, as in the luminous appearance of rotten wood when placed in the dark. From the above phenomena it is evident, that these vapours abound with the principle of inflammability; and their odour probably depends on this principle loosely combined with the water, or some other parts of the volatilised matter. This gas is therefore different from that separated during the vinous fermentation; it is the phlogisticated, and sometimes the inflammable air of Dr Priestley.

“We have thus, for the sake of clearness, and in order to comprehend the whole of the subject, traced the phenomena of fermentation through all its different stages: it is proper, however, to observe, that though every vegetable that has suffered the vinous will proceed to the acetous and putrefactive fermentations, yet the second stage is not necessarily preceded by the first, nor the third by the second; or in other words, the acetous fermentation is not necessarily confined to those substances which have undergone the vinous, nor the putrefactive to those which have undergone the acetous fermentation. Thus it is, that gums dissolved in water shall pass to the acetous without undergoing the vinous fermentation; and glutinous matter seems to run into putrefaction without showing any previous ascence: and farther, these changes frequently happen notwithstanding that the matter is under those conditions which are favourable to the preceding stages.

“From the foregoing sketch, the importance of the subject in the study of Pharmacy will be obvious at first sight: it cannot, however, afford us any useful information on the native principles of vegetables. It, however, presents to us new products, the importance of which is well known in chemistry, in medicine, and in the arts. The necessity of being well acquainted with the several facts (for of theory we know none satisfactory),

tisfactory), will appear in the pharmaceutical history and preparation of many of our most valuable drugs. We are next to consider a set of no less complicated operations, viz.

II. Productions from Vegetables by FIRE.

“ In order to analyse, or rather to decompose vegetables by the naked fire, any given quantity of dry vegetable matter is put into a retort of glass or earth. Having filled the vessel about one half or two thirds, we place it in a reverberatory furnace, adapting to it a proper receiver. To collect the elastic fluids, which, if confined, would burst the vessels (and which, too, it is proper to preserve, as being real products of the analysis), we use a perforated receiver with a crooked tube, the extremity of which is received into a vessel full of water, or rather of mercury, and inverted in a basin containing the same: by this contrivance, the liquid matters are collected in the receiver, and the æriform fluids pass into the inverted vessel. If the vegetable is capable of yielding any saline matter in a concrete state, we interpose between the retort and the receiver another vessel, upon whose sides the salt sublimes. These things being properly adjusted, we apply at first a gentle heat, and increase it gradually, that we may observe the different products in proper order. At first an insipid watery liquor passes over, which is chiefly made up of the water of vegetation; on the heat being a little farther increased, this watery liquor, or *phlegm*, becomes charged with an oily matter, having the odour of the vegetable, if it possessed any in its entire state; along with this oil we also obtain an acid resembling the acetous, and which communicates to the oil somewhat of a saponaceous nature; on the heat being carried still farther, we procure more acid, with an oil of a dark colour, and the colour gradually deepens as the distillation advances. The oil now ceases to retain the peculiar odour of the vegetable; and, being scorched by the heat, sends forth a strong disagreeable smell like tar: it is now called *empyreumatic oil*. About this time also some elastic vapours rush into the inverted vessel; these generally consist of inflammable or fixed airs, and very often of a mixture of both; the volatile salt now also sublimes, if the vegetable was of a nature to furnish it. By the time the matter in the retort has acquired a dull red heat, nothing further will arise: we then stop; and allowing the vessel to cool, we find a mass of charcoal, retaining more or less the form and appearance of the vegetable before its decomposition.

“ We have thus described, in the order of their succession, the several products obtained from the generality of vegetables when thus analysed in close vessels and in the naked fire.

“ It is, however, to be understood, that the proportion of these principles turns out very various; the more succulent yield more water, and the more solid afford a greater quantity of the other principles. Independent also of this difference, the nature of the products themselves is found to differ in different vegetables: thus in the cruciform plants, and in the emulsive and farinaceous seeds, the saline matter which comes over with the water and oil is found to be alkaline; sometimes again it is ammoniacal, from the combination of the acid with the volatile alkali passing over at the end of the process; it is also probable, that the acids of vegetables are not all of the same nature, though they exhibit the same external

nal marks. When volatile alkali is obtained, it is always found in the mild effervescing state: it is procured, however, from a few vegetables only; it is seldom in a concrete form, being generally dissolved in the phlegm; and as it ordinarily makes its appearance about the end of the process, it is probable that its formation is owing to some peculiar combination of the oil and fixed alkali. The plants containing much oily combustible matter seem to be those which more peculiarly yield inflammable air, whilst the mucilages appear to be as peculiarly fitted for affording the fixed air or aerial acid. The chemical properties of charcoal seem to be always the same from whatever vegetable it has been produced: on a minute examination (which, however, is not the business of pharmacy), it is found to consist of fixed air, the principle of inflammability, a small quantity of earth, saline matter, and a little water. The whole of the analysis then amounts to air, water, earth, and the principle of inflammability; for by repeated distillations the oil is resolved into water, the principle of inflammability, and a little earth; the saline matter also is a product arising from a combination of the earthy matter with water or the principle of inflammability in some shape or other, or perhaps with both. That these combinations take place, has at least been the opinion of the chemists.

"We formerly said that charcoal was partly composed of saline matter; it therefore remains that we should next decompose the charcoal, in order to obtain or separate,

The fixed Salts of Vegetables.

"WHEN vegetable charcoal has been burnt, there remains a quantity of ashes or cinders of a blackish gray or white colour: these, when boiled or infused in water, communicate to it a pungent saline taste; the salt thus held in solution may, by evaporation, be reduced to a concrete state: this saline matter, however, is generally found to be mixed with ferruginous, earthy, and other impurities, and likewise with a number of neutral salts of different kinds. In this mixed condition it is the

Potashes used in Commerce.

"THIS salt, or rather compound of different salts, is procured by burning large quantities of wood of whatever kind; and this process is called *incineration*: the predominating salt, however, is alkaline; and as the neutral salts are obtained to better advantage by other means, they are generally neglected in the purification of potashes. Potashes, then, freed from its impurities, and separated from the other salts by processes to be hereafter mentioned, is now

The fixed Vegetable Alkali.

"ALKALIS in general are distinguished by a pungent taste, the very reverse of that of sourness; by their destroying the acidity of every sour liquor; and by their changing the blue and red colours of vegetables to a green: they attract more or less the moisture of the air, and some of them deliquesce into a liquor. The fixed alkalis, which we shall at present consider more particularly, are fusible by a gentle heat: by a greater degree of heat they are dissipated; their fixity, therefore, is only relative to the other kind of alkalis, viz. the volatile: they dissolve and form glass with

with all earths: and, lastly, when joined with acids to the point of saturation, they form what are called *Neutral Salts*.

“ These characters will afford some necessary and preliminary knowledge of these substances in general; and we shall afterwards find that they are sufficient to distinguish them from all other saline bodies: it is necessary, however, to examine them more nicely, and our analysis has not yet reached so far as to present them in their simplest state. Previous to the discoveries of Dr Black, the vegetable fixed alkali (which we at present speak of particularly), when separated from the foreign matters with which it is mixed in the ashes, was considered to be in its purest state; we shall afterwards find that it is still a compound body, and is really a neutral salt, compounded of pure alkali, and fixed air or the aërial acid. We presume, then, that the particular history of its chemical and medicinal properties will be better understood when we come to those processes by which it is brought to its most pure and simple state. We shall only therefore observe for the present, that fixed vegetable alkali, not only in its pure state, but also when neutralised by aërial acid, seems always to be one and the same thing, from whatever vegetable it has been produced. Those of some sea-plants must, however, be excepted: the saline matter obtained from these last is, like the former, in a mixed and impure state; it differs, however, from potashes, in containing an alkali of somewhat different properties. The cinder of sea-plants containing this alkali is called

Soda.

“ *SODA*, then, as we have just now hinted, is produced by the incineration of the kali and other sea-plants: And from this impure and mixed mass of cinder, is obtained the marine, mineral, or muriatic alkali. This alkali has acquired these names, because it is the base of the common marine or sea salt: it differs from the vegetable alkali in being more easily crystallizable; when dried, it does not like the former attract humidity sufficient to form a liquid; it is somewhat less pungent to the taste, and, according to Bergman, has less attraction for acids than the vegetable alkali.

“ It is, however, to be observed, that this alkali, when deprived of fixed air, that is to say, when brought to its purest state, can scarcely if at all be distinguished from the vegetable alkali; and indeed the true distinction can only be formed from their combinations, each of them affording with the same acid very different neutral salts. It belonged to this place to mention some of the characters of alkalis in general, and also some of those marks by which the vegetable and mineral alkalis are distinguished from each other; but for a more particular history of their chemical and medicinal properties, we refer to the account of their pharmaceutical preparations. As the volatile alkali is rarely produced from vegetables, but is very generally obtained from animal matter, we shall consider that kind of alkali when we come to analyse the animal kingdom.

Of vegetable Earth.

“ *AFTER* all the saline matter contained in the ashes of vegetables has been washed off by the processes before mentioned, there yet remains an insipid

insipid earthy-like powder, generally of a whitish colour, insoluble in water, and from which some iron may be attracted by the magnet. It is said to have formed alum with the vitriolic acid; a kind of selenite has also been obtained, but somewhat different from that produced by the union of the same acid with calcareous earth; this residuum of burnt vegetables differs also from calcareous earth, in not being susceptible of becoming quicklime by calcination. It has been found that this residuum, instead of an earth, is a calcareous phosphoric salt, similar to that obtained from the bones of animals.

“We have thus finished our analysis of vegetables by the naked fire; and have only to observe, that, like that by fermentation, it can afford us no useful information on the native principles of the vegetable itself.”

When chemistry began first to be formed into a rational science, and to examine the component parts and internal constitution of bodies, it was imagined, that this resolution of vegetables by fire, discovering to us all their active principles, unclogged and unmixed with one another, would afford the surest means of judging of their medicinal powers. But on prosecuting these experiments, it was soon found that they were insufficient for that end: that the analyses of poisonous and esculent plants agreed often as nearly with one another as the analyses of one plant: that by the action of a burning heat, two principles of vegetables are not barely separated, but altered, transposed, and combined into new forms; inasmuch that it was impossible to know what form they existed in, and what qualities they were endowed with, before these changes and transpositions happened. If, for example, thirty-two ounces of a certain vegetable substance are found to yield ten ounces and a half of acid liquor, above one ounce and five drams of oil, and three drams and a half of fixt alkaline salt; what idea can this analysis give of the medicinal qualities of *gum Arabic*?

III. SUBSTANCES naturally contained in Vegetables, and separable by Art without Alteration of their native Qualities.

“It has been supposed, that there is one general fluid or blood which is common to all vegetables, and from which the fluids peculiar to particular plants and their parts are prepared by a kind of secretion: To this supposed general fluid botanists have given the name of *sap*. This opinion is rendered plausible from the analogy in many other respects between vegetable and animal substances: and indeed if we consider the water of vegetation as this general fluid, the opinion is perhaps not very far from the truth; but the notion has been carried much farther than supposing it to be mere water, and the opinion of naturalists on this subject does not seem to be well supported by experience. It is difficult to extract this sap without any mixture of their constituent parts. But in a few vegetables, from which it distils by wounding their bark, we find this supposed general blood possessing properties not a little various: Thus the juice effused from a wounded birch is considerably different from that poured out from an incision in the vine.

1. Gross Oils.

"VEGETABLES, like animals, contain an oil in two different states. That is, in several vegetables a certain quantity of oil is superabundant to their constitution, is often lodged in distinct reservoirs, and does not enter into the composition of their other principles: in most vegetables, again, another quantity of oil is combined, and makes a constituent part of their principles. Of this last we formerly spoke in our analysis of vegetables by fire; and it is the former we mean to consider, under the three following heads.

"Gross oils abound chiefly in the kernels of fruits and in certain seeds; from which they are commonly extracted by expression, and hence are distinguished by the name of *Expressed Oils*. They are contained also in all the parts of all vegetables that have been examined, and may be forced out by vehemence of fire; but here their qualities are greatly altered in the process by which they are extracted or discovered, as we have seen under the foregoing head.

"These oils, in their common state, are not dissoluble either in vinous spirits or in water, though by means of certain intermedia they may be united both with one and the other. Thus a skilful interposition of sugar renders them miscible with water into what are called lohochs and oily draughts: by the intervention of gum or mucilage they unite with water into a milky fluid: by alkaline salts they are changed into a soap, which is miscible both with watery and spirituous liquors, and is perfectly dissolved by the latter into an uniform transparent fluid. The addition of any acid to the soapy solution absorbs the alkaline salt; and the oil, which of course separates, is found to have undergone this remarkable change, that it now dissolves without any intermedium in pure spirit of wine.

"Expressed oils, exposed to the cold, lose greatly of their fluidity: some of them, in a small degree of cold, congeal into a consistent mass. Kept for some time in a warm air, they become thin and highly rancid: their soft, lubricating, and relaxing quality is changed into a sharp acrimonious one: and in this state, instead of allaying they occasion irritation; instead of obtunding corrosive humours, they corrode and inflame. These oils are liable to the same noxious alteration while contained in the original subject: hence the rancidity which the oily seeds and kernels, as almonds and those called the cold seeds, are so liable to contract in keeping. Nevertheless on triturating these seeds or kernels with water, the oil, by the intervention of the other matter of the subject, unites with the water into an emulsion or milky liquor, which, instead of growing rancid, turns sour on standing.

"It appears then that some kind of fermentation goes on in the progress of oils to the rancid state; and it would seem from some experiments by Mr Macquer, that an acid is evolved, which renders them more soluble in spirit of wine than before.

"In the heat of boiling water, and even in a degree of heat as much exceeding this as the heat of boiling water does that of the human body, these oils suffer little dissipation of their parts. In a greater heat, they emit a pungent vapour, seemingly of the acid kind; and when suffered to grow cold again, they are found to have acquired a greater degree of consistence than they had before, together with an acrid taste. In a heat

heat approaching to ignition, in close vessels, the greatest part of the oil arises in an empyreumatic state, a black coal remaining behind.

2. Gross sebaceous Matter.

“FROM the kernels of some fruits, as that of the chocolate nut, we obtain, instead of a fluid oil, a substance of a butyraceous consistence; and from others, as the nutmeg, a solid matter as firm as tallow. These concretes are most commodiously extracted by boiling the subject in water: the sebaceous matter, liquefied by the heat, separates and arises to the surface, and resumes its proper consistence as the liquor cools.

“The substances of this class have the same general properties with expressed oils, but are less disposed to become rancid in keeping than most of the common fluid oils. It is supposed by the chemists, that their thick consistence is owing to a larger admixture of an acid principle; for, in their resolution by fire, they yield a vapour more sensibly acid than the fluid oils; and fluid oils, by the admixture of concentrated acids, are reduced to a thick or solid mass.

3. Essential Oils.

“ESSENTIAL oils are obtained only from those vegetables, or parts of vegetables, that are considerably odorous. They are the direct principle, in which the odour, and oftentimes the warmth, pungency, and other active powers of the subject, reside; whence their name of *Essences* or *Essential Oils*.

“Essential oils are secreted fluids; and are often lodged in one part of the plant, whilst the rest are entirely void of them. Sometimes they are found in separate spaces or receptacles; and there, too, visible by the naked eye: thus, in the rind of lemons, oranges, citrons, and many others, there are placed every where small pellucid vesicles, which, by expressing the peel near to the flame of a candle, squirt out a quantity of essential oil, forming a stream of lambent flame; hence, too, an oleosaccharum may be made, by rubbing the exterior surface of these peels with a piece of lump-sugar, which at once tears open these vesicles, and absorbs their contained oil.”

Essential oils unite with rectified spirit of wine, and compose with it one homogeneous transparent fluid; though some of them require for this purpose a much larger proportion of the spirit than others. The difference of their solubility perhaps depends on the quantity of disengaged acid; that being found by Mr Macquer not only to promote the solution of essential oils, but even of those of the unctuous kind. Water also, though it does not dissolve their whole substance, may be made to imbibe some portion of their more subtile matter, so as to become considerably impregnated with their flavour; by the admixture of sugar, gum, the yolk of an egg, or alkaline salts, they are made totally dissoluble in water. Digested with volatile alkalis, they undergo various changes of colour, and some of the less odorous acquire considerable degrees of fragrance; whilst fixt alkalis universally impair their odour.

“The specific gravity of most of these oils is less than that of water: some of them, however, are so heavy as to sink in water; and these varieties will be noticed when we come to their preparation.”

In the heat of boiling water, these oils totally exhale; and on this principle

principle they are commonly extracted from subjects that contain them; for no other fluid, that naturally exist in vegetables, is exhalable by that degree of heat, except the aqueous moisture, from which greatest part of the oil is easily separated. Some of these oils arise with a much less heat, a heat little greater than that in which water begins visibly to evaporate. In their resolution by a burning heat, they differ little from expressed oils.

Essential oils, exposed for some time to a warm air, suffer an alteration very different from that which the expressed undergo. Instead of growing thin, rancid, and acrimonious, they gradually become thick, and at length harden into a solid brittle concrete; with a remarkable diminution of their volatility, fragrantcy, pungency, and warm stimulating quality. In this state, they are found to consist of two kinds of matter; a fluid oil, volatile in the heat of boiling water, and nearly of the same quality with the original oil; and of a grosser substance which remains behind, not exhalable without a burning heat, or such a one as changes its nature, and resolves it into an acid, an empyreumatic oil, and a black coal.

The admixture of a concentrated acid instantly produces, in essential oils, a change nearly similar to that which time effects. In making these kinds of commixtures, the operator ought to be on his guard; for when a strong acid, particularly that of nitre (of which hereafter) is poured hastily into an essential oil, a great heat and ebullition ensue, and often an explosion happens, or the mixture bursts into flame. The union of expressed oils with acids is accompanied with much less conflict.

4. Concrete essential Oil.

SOME vegetables, as roses and elecampane roots, instead of a fluid essential oil, yield a substance possessing the same general properties, but of a thick or sebaceous consistence. This substance appears to be of as great volatility, and subtilty of parts, as the fluid oils: it equally exhales in the heat of boiling water, and concretes upon the surface of the collected vapour. The total exhalation of this matter, and its concreting again into its original consistent state, without any separation of it into a fluid and a solid part, distinguishes it from essential oils that have been thickened or indurated by age or by acids.

5. Camphor.

CAMPHOR is a solid concrete, obtained chiefly from the woody parts of certain Indian trees. It is volatile like essential oils, and soluble both in oils and inflammable spirits: it unites freely with water by the intervention of gum, but very sparingly and imperfectly by the other intermedia that render oils miscible with watery liquors. It differs from the sebaceous as well as fluid essential oils, in suffering no sensible alteration from long keeping; in being totally exhalable, not only by the heat of boiling water, but in a warm air, without any change or separation of its parts, the last particle that remains unexhaled appearing to be of the same nature with the original camphor: in its receiving no empyreumatic impression, and suffering no resolution, from any degree of fire to which it can be exposed in close vessels, though readily combustible in the open air; in being dissolved by concentrated acids into a liquid form; and in several other properties which it is needless to specify in this place.

6. Refin.

ESSENTIAL oils, indurated by age or acids, are called *Refins*. When the indurated mass has been exposed to the heat of boiling water, till its more subtile part, or the pure essential oil that remained in it, has exhaled, the gross matter left behind is likewise called *refin*. We find, in many vegetables, refin analogous both to one and the other of these concretes; some containing a subtile oil, separable by the heat of boiling water; others containing nothing that is capable of exhaling in that heat.

Refins in general dissolve in rectified spirit of wine, though some of them much more difficultly than others: it is chiefly by means of this dissolvent that they are extracted from the subjects in which they are contained. They dissolve also in oils both expressed and essential; and may be united with watery liquors by means of the same intermedia which render the fluid oils miscible with water. In a heat less than that of boiling water, they melt into an oily fluid; and in this state they may be incorporated one with another. In their resolution by fire, in close vessels, they yield a manifest acid, and a large quantity of empyreumatic oil.

7. Gum.

GUM differs from the foregoing substances in being uninflamable: for though it may be burnt to a coal, and thence to ashes, in never yields any flame. It differs remarkably also in the proportion of the principles into which it is resolved by fire; the quantity of empyreumatic oil being far less, and that of acid far greater. In the heat of boiling water, it suffers no dissipation: nor does it liquefy like refin; but continues unchanged, till the heat is so far increased as to scorch or turn it to a coal.

By a little quantity of water, it is softened into a viscous adhesive mass, called *mucilage*: by a larger quantity it is dissolved into a fluid, which proves more or less glutinous according to the proportion of gum. It does not dissolve in vinous spirits, or in any kind of oil: nevertheless, when softened with water into a mucilage, it is easily miscible both with the fluid oils and with refin; which by this means become soluble in watery liquors along with the gum, and are thus excellently fitted for medicinal purposes.

This elegant method of uniting oils with aqueous liquors, which has been kept a secret in few hands, appears to have been known to Dr. Grew. "I took (says he) oil of aniseeds, and pouring it upon another body, I so ordered it, that it was thereby turned into a perfect milk-white balsam or butter; by which means the oil became mingable with any vinous or watery liquor, easily and instantaneously dissolving therein in the form of a milk. And note, this is done without the least alteration of the smell, taste, nature, or operation of the said oil. By somewhat the like means any other stillatitious oil may be transformed into a milk-white butter, and in like manner be mingled with water or any other liquor; which is of various use in medicine, and what I find oftentimes very convenient and advantageous to be done." (*Grew of mixture, chap. v. inst. i. § 7.*) This inquiry has lately been further prosecuted in the first volume of the Medical Observations published by a society of physicians in London; where a variety of experiments

ments is related, of rendering oils, both essential and expressed, and different unctuous and resinous bodies, soluble in water by the mediation of gum. Mucilages have also been used for suspending crude mercury, and some other ponderous and insoluble substances: the mercury is by this means not a little divided; but it is found that the particles are very apt to run together or subside, if a pretty constant agitation is not kept up.

As oily and resinous substances are thus united to water by the means of gum, so gums may in like manner be united to spirit of wine by the intervention of resins and essential oils; though the spirit does not take up near so much of the gum as water does of the oil of resin.

Acid liquors, though they thicken pure oils, or render them consistent, do not impede the dissolution of gum, or of oils blended with gum. Alkaline salts, on the contrary, both fixt and volatile, though they render pure oils dissoluble in water, prevent the solution of gum, and of mixtures of gum and oil. If any pure gum be dissolved in water, the addition of any alkali will occasion the gum to separate, and fall to the bottom in a consistent form; if any oily or resinous body was previously blended with the gum, this also separates, and either sinks to the bottom, or rises to the top, according to its gravity.

8. Gum-resin.

By gum-resin is understood a mixture of gum and resin. Many vegetables contain mixtures of this kind, in which the component parts are so intimately united, with the interposition perhaps of some other matter, that the compound, in a pharmaceutical view, may be considered as a distinct kind of principle; the whole mass dissolving almost equally in aqueous and in spirituous liquors; and the solutions being not turbid or milky, like those of the grosser mixtures of gum and resin, but perfectly transparent. Such is the astringent matter of bistort-root, and the bitter matter of gentian. It were to be wished that we had some particular name for this kind of matter; as the term gum-resin is appropriated to the grosser mixtures, in which the gummy and resinous part are but loosely joined, and easily separable from one another.

“We shall afterwards find that it will be convenient to imitate this natural combination by art. As the effects of medicines very generally depend on their solubility in the stomach, it is often necessary to bring their more insoluble parts, such as resinous and oily matters, into the state of gum-resin: this is done, as we have mentioned in the former article, by the mediation of mucilage. By this management these matters become much more soluble in the stomach; and the liquor thus prepared is called an emulsion, from its whitish colour, resembling that of milk.”

9. Saline Matter.

Of the saline juices of vegetables there are different kinds, which have hitherto been but little examined: the sweet and the acid ones are the most plentiful, and those which are the most known.

“There have lately, however, been discovered a considerable variety of salts in different vegetables. The mild fixed alkali, which was formerly considered as a product of the fire, has been obtained from almost all plants by macerating them in acids; the vegetable alkali is the most common, but the mineral is found also in the marine plants. Besides the fixed

fixed alkalis, several other salts have been detected in different vegetables; such as vitriolated tartar, common salt, Glauber's salt, nitre, febrifugal salt, and selenite. From some experiments, too, the volatile alkali has been supposed to exist ready formed in many plants of the cruciform or tetradynamian tribe.

"It is, however, to be understood, that though some of these salts are really products of vegetation, yet others of them are not unfrequently adventitious, being imbibed from the soil without any change produced by the functions of the vegetable."

The juices of vegetables, exposed to a heat equal to that of boiling water, suffer generally no other change than the evaporation of their watery moisture; the saline matter remaining behind, along with such of the other not volatile parts as were blended with it in the juice. From many, after the exhalation of great part of the water, the saline matter gradually separates in keeping, and concretes into little solid masses, leaving the other substances dissolved or in a moist state: from others, no means have yet been found of obtaining a pure concrete salt.

"The salts more peculiarly native and essential to vegetables are the sweet and the sour: these two are frequently blended together in the same vegetable, and sometimes pass into one another at different ages of the plant. Of the four salts several kinds are known in pharmacy and in the arts; such as those of sorrel, of lemons, oranges, citrons, &c. The saccharine salts are also obtained from a great number of vegetables; they may in general be easily discovered by their sweet taste: the sugar-cane is the vegetable from which this saline matter is procured in greatest quantity, and with most profit in commerce.

"For its medicinal and chemical properties we refer to the article SUGAR."

The sweet and sour salts above mentioned dissolve not only in water like other saline bodies, but many of them, particularly the sweet, in rectified spirit also. The gross oily and gummy matter, with which they are almost always accompanied in the subject, dissolves freely along with them in water, but is by spirit in great measure left behind. Such heterogeneous matters, as the spirit takes up, are almost completely retained by it, while the salt concretes; but of those, which water takes up, a considerable part always adheres to the salt. Hence essential salts, as they are called, prepared in the common manner from the watery juices of vegetables, are always found to partake largely of the other soluble principles of the subject; whilst those extracted by spirit of wine prove far more pure. By means of rectified spirit, some productions of this kind may be excellently freed from their impurities; and perfect saccharine concretions obtained from many of our indigenous sweets.

There is another kind of saline matter obtained from some resinous bodies, particularly from benzoine, of a different nature from the foregoing, and supposed by some of the chemists to be a part of the essential oil of the resin, coagulated by an acid, with the acid more predominant or more disengaged than in the other kinds of coagulated or indurated oils. These concretes dissolve both in water and in vinous spirits, though difficultly and sparingly in both: they show some marks of acidity, have a considerable share of smell like that of the resin they are obtained from,

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exhale in a heat equal to that of boiling water, or a little greater, and prove inflammable in the fire.

10. Farina or Flour.

"THIS substance has much of the nature of gum, but has more taste, is more fermentable, and much more nutritive. It abounds in very many vegetables, and is generally deposited in certain parts, seemingly for the purpose of its being more advantageously accommodated to their nourishment and growth. Several of the bulbous and other roots, such as those of potatoes, briony, those from which cassava is extracted, salop, and many others, contain a great deal of a white *secule* resembling and really possessing the properties of farina. The plants of the leguminous tribe, such as peas and beans, are found also to abound with this matter. But the largest quantity of farina resides in grains, which are therefore called *farinaceous*. Of this kind are those of wheat, rye, barley, oats, rice, and other similar plants.

"At first sight we would suppose that farina was one homogeneous substance: it is, however, found to be a compound of three different and separable parts. To illustrate this, we shall take for our example the farina of wheat, being of all others the vegetable which affords it in greatest quantity, and in its most perfect state. To separate these different parts, then, we form a paste with any quantity of flour and cold water; we suspend this paste in a bag of muslin or of such like cloth; we next let fall upon it a stream of cold water from some height, and the bag may now and then be very gently squeezed; the water in its descent carries down with it a very fine white powder, which is to be received along with the water into a vessel placed below the bag: The process is thus to be continued till no more of this white powder comes off, which is known by the water which passes through the bag ceasing to be of a milky colour. The process being now finished, the farina is found to be separated into three different substances: the glutinous or vegeto-animal part remains in the bag; the amylum or starch is deposited from the water which has been received into the vessel placed below the bag; and, lastly, a mucous matter is held dissolved in the same water from which the starch has been deposited: This mucous part may be brought to the consistence of honey, by evaporating the water in which it is kept in solution.

"These several parts are found also to differ remarkably in their sensible and chemical properties. The vegeto-animal part is of a whitish grey colour, is a tenacious, ductile, and elastic matter, possessing somewhat of the texture of animal membranes: Distilled in a retort, it yields, like all animal matters, a true volatile alkali, and its coal affords no fixed alkali. It is not only insoluble, but even indiffusible, in water; both which appear from its remaining in the bag after long-continued lotions. Like gums, it is insoluble in alcohol, in oils, or æther; but it is also insoluble in water, and yields on distillation products very different from those afforded by gums: It is therefore of an animal nature, and approaches perhaps nearer to the coagulable lymph of animal blood than to any other substance.

"The fixed alkalis, by means of heat, dissolve the gluten vegeto-animale, but

but when it is precipitated from this solution by means of acids, it is found to have lost its elasticity. The mineral acids, and especially the nitrous, are also capable of dissolving the vegeto-animal part of the farina.

"The starch, amyllum, or the amylaceous matter, makes the principal part of the farina. As we before noticed, it is that fine powder deposited from the water which has pervaded the entire farina: it is of a greyish white colour, but can be rendered much whiter by making it undergo a certain degree of fermentation. Starch is insoluble in cold water; but in hot water, it forms a transparent glue: hence the necessity of employing cold water in separating it from the vegeto-animal part. Distilled in a retort, it yields an acid phlegm; and its coal affords, like other vegetables, a fixed alkaline salt. As starch forms the greatest part of the farina, it is no doubt the principal nutritive constituent in bread.

"The mucous, or rather the mucoso-saccharine matter, is only in very small quantity in bread. This substance on distillation is found to exhibit the phenomena of sugar. The use of this matter seems to be that of producing the vinous fermentation: and we may observe once for all, that the preparation of good bread probably depends on a proper proportion of the three different parts above described; that is to say, that the vinous fermentation is promoted by the mucoso-saccharine part, the acetous by the starch, and the putrid by the gluten vegeto-animale. From different states or degrees of these several stages of fermentation the qualities of good bread are very probably derived. What remains on this very important subject will be taken up when we come to speak of wheat in the *Materia Medica*.

11. Of the Colouring Matter of Vegetables.

"THE colouring matter of vegetables seems to be of an intermediate nature between the gummy and resinous parts. It is in many plants equally well extracted by water and by rectified spirit: it is also, however, procurable in the form of a *lake*, not at all soluble in either of these menstrua. It would seem that the colouring-matter, strictly so called, has hitherto eluded the researches of chemists. It is only, then, the *base* or *nidus*, in which the real colouring-matter is embodied, that chemistry has as yet reached to; and on the chemical properties of this *base* colours are capable of being extracted by different menstrua, and of being variously accommodated to the purposes of dyeing. The substance from which the colours of vegetables are *immediately* derived, is without doubt a very subtile body. Since plants are known to lose their colour when excluded from the light, there is reason to think that the *immediately* colouring substance is primarily derived from the matter of the sun, somehow elaborated by vegetable life.

"Many of these dyes are evolved or variously modified by chemical operations. Thus a colouring matter is sometimes deposited in the form of a *secula* during the putrefaction of the vegetable; in others, it is evolved or changed by alum, by acids, or by alkalis. We may also observe, that any part of the vegetable may be the base of the colouring-matter. This appears from the solubility of the different dyes in their proper menstrua; and in these solutions we have not been able to separate the real colouring-matter from the base in which it is inviscated. After all, then,

we must conclude, that a full investigation of this subject more properly belongs to the sublimer parts of chemistry, than to the business we are at present engaged in.

“ The colouring drugs will be considered in their proper places.

“ In finishing our history of the vegetable kingdom, it only remains that we should offer some”

General Observations on the foregoing Principles.

1. **ESSENTIAL** oils, as already observed, are obtainable only from a few vegetables, and camphor from a much smaller number : but gross oil, resin, gum, and saline matter, appear to be common in greater or less proportion to all ; some abounding more with one, and others with another.

2. The several principles are in many cases intimately combined ; so as to be extracted together from the subject, by those dissolvents, in which some of them separately could not be dissolved. Hence watery infusions and spirituous tinctures of a plant, contain, respectively, more than water or spirit is the proper dissolvent of.

3. After a plant has been sufficiently infused in water, all that spirit extracts from the residuum may be looked upon as consisting wholly of such matter as directly belongs to the action of spirit. And contrarywise, when spirit is applied first, all that water extracts afterwards may be looked upon as consisting only of that matter of which water is the direct dissolvent.

4. If a vegetable substance, containing all the principles we have been speaking of, be boiled in water, the essential oil, whether fluid or concrete, and the camphor, and volatile essential salt, will gradually exhale with the steam of the water, and may be collected by receiving the steam in proper vessels placed beyond the action of the heat. The other principles not being volatile in this degree of heat, remain behind : the gross oil and sebaceous matter float on the top : the gummy and saline substance, and a part of the resin, are dissolved by the water, and may be obtained in a solid form by straining the liquor, and exposing it to a gentle heat till the water has exhaled. The rest of the resin, still retained by the subject, may be extracted by spirit of wine, and separated in its proper form by exhaling the spirit. On these foundations, most of the substances contained in vegetables may be extracted, and obtained in a pure state, however they may be compounded together in the subject.

5. Sometimes one or more of the principles is found naturally disengaged from the others, lying in distinct receptacles within the subject, or extravasated and accumulated on the surface. Thus, in the dried roots of angelica, cut longitudinally, the microscope discovers veins of resin. In the flower-cups of hypericum, and the leaves of the orange-tree, transparent points are distinguished by the naked eye ; which on the first view seem to be holes, but on a closer examination are found to be little vesicles filled with essential oil. In the bark of the fir, pine, larch, and some other trees, the oily receptacles are extremely numerous, and so copiously supplied with the oily and resinous fluid, that they frequently burst, especially in the warm climates, and discharge their contents in great quantities. The acacia tree in Egypt, and the plum and cherry among ourselves, yield almost pure gummy exudations. From a species of ash is secreted

secreted the saline sweet substance manna; and the only kind of sugar which the ancients were acquainted with, appears to have been a natural exudation from the cane.

6. The foregoing principles are, so far as is known, all that naturally exist in vegetables; and all that art can extract from them, without such operations as change their nature, and destroy their original qualities. In one or more of these principles, the colour, smell, taste, and medicinal virtues, of the subject, are almost always found concentrated.

7. In some vegetables, the whole medicinal activity resides in one principle. Thus, in sweet almonds, the only medicinal principle is a gross oil; in horse-radish root, an essential oil; in jalap root, a resin; in marsh-mallow root, a gum; in the leaves of sorrel, a saline acid substance.

8. Others have one kind of virtue residing in one principle, and another in another. Thus Peruvian bark has an astringent resin, and a bitter gum; wormwood, a strong-flavoured essential oil, and a bitter gum-resin.

9. The gross insipid oils and sebaceous matters, the simple insipid gums, and the sweet and acid saline substances, appear to nearly agree respectively among themselves, in their medicinal qualities, as well as in their pharmaceutic properties.

10. But essential oils, resins, and gum-resins, differ greatly in different subjects. As essential oils are universally the principle of odour in vegetables, it is obvious that they must differ in this respect as much as the subjects from which they are obtained. Resins frequently partake of the oil, and consequently of the differences depending thereon; with this further diversity, that the gross resinous part often contains other powers than those which reside in oils. Thus from wormwood a resin may be prepared, containing not only the strong smell and flavour, but likewise the whole bitterness of the herb; which last quality the oil is entirely free from. The bitter, astringent, purgative, and emetic virtue of vegetables, reside generally in different sorts of resinous matter, either pure or blended with gummy and saline parts; of which kind of combinations, there are many so intimate, that the component parts can scarcely be separated from one another, the whole compound dissolving almost equally in aqueous and spirituous menstrua.

11. There are some substances also, which, from their being totally dissoluble in water, and not at all in spirit, may be judged to be mere gums; but which, nevertheless, possess virtues never to be found in the simple gums. Such are the astringent gum called *acacia*, and the purgative gum extracted from aloes.

12. It is supposed that vegetables contain certain subtle principles or presiding spirits, different in different plants, of too great tenuity to be collected in their pure state, and of which oils, gums, and resins are only the matrices or vehicles. This inquiry is foreign to the purposes of pharmacy, which is concerned only about grosser and more sensible objects. When we obtain from an odoriferous plant an essential oil, containing in a small compass the whole fragrance of a large quantity of the subject, our intentions are equally answered, whether the substance of the oil be the direct odorous matter, or whether it has diffused through it a fragrant principle more subtle than itself. And when this oil, in long keeping, loses its odour, and becomes a resin, it is equal in regard to the present

considerations, whether the effect happens from the avolation of a subtile principle, or from a change produced in the substance of the oil itself.

S E C T. II.

ANIMALS.

“FROM the history we have already given of the vegetable kingdom, our details on animal-substances may, in many particulars, be considerably abridged. All animals are fed on vegetables, either directly or by the intervention of other animals. No part of their substance is derived from any other source except water. The small quantity of salt used by man and some other animals, is only necessary as a seasoning or stimulus to the stomach. As the animal then is derived from the vegetable matter, we accordingly find that the former is capable of being resolved into the same principles as those of the latter. Thus, by repeated distillations, we obtain from animal-substances, water, oil, air, an easily destructible salt, and charcoal. These secondary principles are by farther processes at length resolvable into the same proximate principles which we found in vegetables, viz. water, air, earth, and the principle of inflammability. But though the principles of vegetable and animal-substances are at bottom the same; yet these principles are combined in a very different manner. It is exceedingly rare that animal-substances are capable of the vinous or acetous fermentations; and the putrefactive, into which they run remarkably fast, is also different in some particulars from the putrefaction of vegetables; the escape of the phlogiston in the form of light is more evident, and the smell is much more offensive, in the putrefaction of animal than of vegetable substances. The putrefaction of urine is indeed accompanied with a peculiar fetor, by no means so intolerable as that of other animal matters; this we suppose to be owing to the pungency derived to the effluvia from the volatile alkali, and also from the urine containing less inflammable matter than the blood and many other fluids. When analysed by a destructive heat, animals afford also products very different from those of vegetables; the empyreumatic oil has a particular, and much more fetid odour; and the volatile salt, instead of being an acid, as it is in most vegetables, is found to be in animals a volatile alkali. Chemists have indeed spoken of an acid procurable from animal-substances; and indeed certain parts of animal-bodies are found to yield a salt of this kind: but it by no means holds with animal-substances in general; and though the proofs to the contrary were even conclusive, it is confessedly in such small quantity, as not to deserve any particular regard. In some animals, however, an acid exists, uncombined and ready formed in their bodies. This is particularly manifest in some insects, especially ants, from which an acid resembling the acetous has been procured by boiling them in water. The solid parts of animal-bodies, as the muscles, teguments, tendons, cartilages, and even the bones, when boiled with water, give a gelatinous matter or *glue* resembling the vegetable gums, but much more adhesive. We must, however, except the horny parts and the hair, which seem to be little soluble either in water or in the liquors of the stomach. The acids, the alkalis, and quicklime, are also found to be powerful solvents of animal-

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matters. It is from the solid parts that the greatest quantity of volatile alkali is obtained; it arises along with a very fetid empyreumatic oil, from which it is in some measure separated by repeated rectifications. This salt is partly in a fluid, and partly in a concrete state; and from its having been anciently prepared in greatest quantity from the horns of the hart, it has been called *salt* or *spirit of hartshorn*. Volatile alkali is, however, procurable from all animals, and from almost every part of animal-bodies. Though we are sometimes able to procure fixed alkali from an animal cinder, yet it is probable that this salt did not make any part of the living animal, but rather proceeded from the introduction of some saline matter, incapable of being assimilated by the functions of the living creature.

“ In speaking of the fluid parts of animals, we should first examine the general fluid, or blood, from whence the rest are secreted. The blood, which at first sight appears to be a homogeneous fluid, is composed of several parts, easily separable from each other, and which even the microscope can perceive in its uncoagulated state. On allowing it to stand at rest and be exposed to the air, it separates into what are called the *crassamentum* and the *serum*. The crassamentum, or cruor, chiefly consists of the red globules, joined together by a third substance, viz. the coagulable lymph: the chemical properties of these globules are not as yet understood; but it appears that it is in these that the greatest quantity of the iron found in blood resides. The serum is a yellowish sub-viscid liquor, having little sensible taste or smell: at a heat of 160 of Fahrenheit, it is converted into a jelly. This coagulation of the serum is also owing to its containing a matter of the same nature as that in the crassamentum, viz. the coagulable lymph: whatever, then, coagulates animal-blood, produces that effect on this concrescible part. Several causes, and many chemical substances, are capable of effecting this coagulation; such as contact of air, heat, alcohol, mineral acids, and their combinations with earths, as alum, and some of the metallic salts. The more perfect neutral salts are found to prevent the coagulation, such as common salt and nitre.

“ Of the fluids secreted from the blood, there are a great variety in men and other animals. The excrementitious and redundant fluids are those which afford in general the greatest quantity of volatile alkali and empyreumatic oil: there are also some of the secreted fluids, which on a chemical analysis yield products in some measure peculiar to themselves. Of this kind is the urine; which is found to contain in the greatest abundance the noted salt formed from the phosphoric acid and volatile alkali. The fat, too, has been said to differ from the other animal matters, in yielding by distillation a strong acid, but no volatile alkali. There is also much variety in the quantity and state of the combination of the saline and other matters in different secreted fluids: but a fuller investigation of this and other parts of the subject, we refer to the doctrines in Anatomy, Physiology, and Chemistry; with all which it is more immediately connected than with the Elements of Pharmacy.”

Animal oils and fats, like the gross oils of vegetables, are not of themselves dissoluble either in water or vinous spirits: but they may be united with water by the intervention of gum or mucilage; and most of them

may be changed into soap; and thus rendered miscible with spirit, as well as water, by fixed alkaline salts.

The odorous matter of some odoriferous animal-substances, as musk, civet, castor, is, like essential oil, soluble in spirit of wine, and volatile in the heat of boiling water. Cartheuser relates, that from castor an actual essential oil has been obtained in a very small quantity, but of an exceedingly strong diffusive smell.

The vesicating matter of cantharides, and those parts of sundry animal-substances in which their peculiar tastes resides, are dissolved by rectified spirit, and seem to have some analogy with resins and gummy resins.

The gelatinous principle of animals, like the gum of vegetables, dissolves in water, but not in spirit or in oils: like gums also, it renders oils and fats miscible with water into a milky liquor.

Some insects, particularly the ant, are found to contain an acid juice, which approaches nearly to the nature of vegetable acids.

There are, however, sundry animal juices which differ greatly, even in these general kinds of properties, from the corresponding ones of vegetables. Thus animal serum, which appears analogous to vegetable gummy juices, has this remarkable difference, that though it mingles uniformly with cold or warm water, yet on considerably heating the mixture, the animal-matter separates from the watery fluid, and concretes into a solid mass. Some have been apprehensive, that the heat of the body, in some distempers, might rise to such a degree, as to produce this dangerous or mortal concretion of the serous humours: but the heat requisite for this effect is greater than the human body appears capable of sustaining, being nearly about the middle point between the greatest human heat commonly observed and that of boiling water.

THE soft and fluid parts of animals are strongly disposed to run into putrefaction: they putrefy much sooner than vegetable matters; and when corrupted, prove more offensive.

This process takes place, in some degree, in the bodies of living animals; as often as the juices stagnate long, or are prevented, by an obstruction of the natural emunctories, from throwing off their more volatile and corruptible parts.

The doctrine of putrefaction, both in living and in dead animals, has lately received great light from the curious and interesting experiments and observations of Dr Pringle. He observes, That if the corruption is great and sudden, a fever or a flux ensue; but that if the accumulation of corrupted matter is so slow, that the body becomes habituated to the putrefaction, a scurvy prevails. Hence the frequency of this last distemper in long voyages, on board unventilated ships, from corrupted air and provisions; in marshy countries, from similar causes; and in a less degree in all northern countries, in moist situations, from a want of due perspiration.

During putrefaction, a quantity of air is generated; all the humours become gradually thinner, and the fibrous parts more lax and tender. Hence the tympany, which succeeds the corruption of any of the viscera, or the imprudent suppression of dysenteries by astringents; and the weakness and laxity of the vessels observable in scurvies, &c.

The crassamentum of human blood changes, by putrefaction, into a dark

dark livid coloured liquor; a few drops of which tinge the serum of a tawny hue, like that of the ichor of sores and dysenteric fluxes, and of the white of the eye, the saliva, the serum of blood drawn from a vein, and that which oozes from a blister in deep scurvies and the advanced state of malignant fevers.

The putrid crassamentum changes a large quantity of recent urine to a flame-coloured water, so common in fevers and in the scurvy. This mixture, after standing an hour or two, gathers a cloud resembling what is seen in the crude water of acute distempers, with some oily matter on the surface, like the scum which floats on scorbutic urine.

The serum of blood deposites, in putrefaction, a sediment resembling well-digested pus, and changes to a faint olive green. A serum so far putrefied as to become green, is perhaps never to be seen in the vessels of living animals; but in dead bodies this serum is to be distinguished by the green colour which the flesh acquires in corrupting. In salted meats, this is commonly ascribed to the brine, but erroneously; for that has no power of giving this colour, but only of qualifying the taste, and in some degree the ill effects of corrupted aliments. In foul ulcers and other sores, where the serum is left to stagnate long, the matter is likewise found of this colour, and is then always acrimonious.

The putrefaction of animal-substances is prevented or retarded by most saline matters, even by the fixed and volatile alkaline salts, which have generally been supposed to produce a contrary effect. Of all the salts that have been made trial of, sea-salt seems to resist putrefaction the least: in small quantities, it even accelerates the process. The vegetable bitters, as chamomile-flowers, are much stronger antiseptics, not only preserving flesh long uncorrupted, but likewise somewhat correcting it when putrid: the mineral acids have this last effect in a more remarkable degree. Vinous spirits, aromatic and warm substances, and the acrid plants, falsely called *alkalescent*, as scurvy grass and horse-radish, are also found to resist putrefaction. "Sugar and camphor are also found to be powerfully antiseptic. Fixed air, or the aerial acid, is likewise thought to resist putrefaction; but above all, the vapours of nitrous acid, in the form of air (the nitrous air of Dr Priestley), is found to be most effectual in preserving animal-bodies from corruption. The list of the septics, or of those substances that promote putrefaction, is very short; and such a property has only been discovered in calcareous earths and magnesia, and a very few salts, whose bases are of these earths."

It is observable, that notwithstanding the strong tendency of animal-matters to putrefaction, yet broths made from them, with the admixture of vegetables, instead of putrefying, turn sour. Dr Pringle finds, that when animal-flesh in substance is beaten up with bread or other farinaceous vegetables, and a proper quantity of water, into the consistence of a pap, this mixture likewise, kept in a heat equal to that of the human body, grows in a little time sour; whilst the vegetable matters, without the flesh, suffer no such change. See the Appendix to his Observations on the Diseases of the Army.

It was observed in the preceding section, that some few vegetables, in the resolution of them by fire, discover some agreement in their matter
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with bodies of the animal-kingdom; yielding a volatile alkaline salt in considerable quantity, with little or nothing of the acid or fixed alkali which the generality of vegetables afford. In animal-substances also, there are some exceptions to the general analysis: from animal-fats, as we before observed, instead of a volatile alkali, an acid liquor is obtained; and their empyreumatic oil wants the peculiar offensiveness of the other animal-oils.

S E C T. III.

MINERALS.

I. OILS and BITUMENS.

IN the mineral-kingdom is found a fluid oil, called *naphtha* or *petroleum*, floating on the surface of waters, or issuing from clefts of rocks, particularly in the eastern countries, of a strong smell, very different from that of vegetable or animal-oils, limpid almost as that of water, highly inflammable, not soluble in spirit of wine, and more averse to union with water than any other oils.

There are different sorts of these mineral oils, more or less tinged, of a more or less agreeable, and a stronger or weaker smell. By the admixture of concentrated acids, which raise no great heat or conflict with them, they become thick, and at length consistent; and in these states are called *bitumens*.

These thickened or concreted oils, like the corresponding products of the vegetable kingdom, are generally soluble in spirit of wine, but much more difficultly, more sparingly, and for the most part only partially: they liquefy by heat, but require the heat to be considerably stronger. Their smells are various; but all of them, either in the natural state, or when melted or set on fire, yield a peculiar kind of strong scent, called from them *bituminous*.

“The solid bitumens are, amber, jet, asphaltum, or bitumen of Judea, and fossil or pit coal. All these bitumens, when distilled, give out an odorous phlegm, or water, more or less coloured and saline; an acid, frequently in a concrete state; an oil, at first light, and resembling the native petrolea, but soon becoming heavier and thicker; and, lastly, a quantity of volatile alkali is obtained: the residuum is a charry matter, differing in its appearances according to the nature of the bitumen which has been analysed.

“From the observations of several naturalists, it is probable that all bitumens are of vegetable and animal origin; that the circumstances by which they differ from the resinous and other oily matters of vegetables and animals, are the natural effects of time, or of an alteration produced on them by mineral acids; or perhaps they are the effect of both these causes combined. This opinion is the more probable, since bitumens, on a chemical analysis, yield oil and volatile alkali; neither of which are found in any other minerals.”

II. EARTHS.

THE little impropriety of joining the vegetable and animal earths to the mineral, must be overlooked for the sake of bringing both under one synop-

noptical view. Under the mineral earths are included stones; these being no other than earths in an indurated state.—The different kinds of these bodies hitherto taken notice of, are the following.

I. *Earths soluble in the nitrous, marine, and vegetable acids, but not at all or exceeding sparingly in the vitriolic acid. When previously dissolved in other acids, they are precipitated by the addition of this last, which thus unites with them into insipid, or nearly insipid concretes, not dissoluble in any liquor.*

Of this kind are,

1. The mineral calcareous earth: *distinguished by its being convertible in a strong fire, without addition, into an acrimonious calx called quicklime.* This earth occurs in a variety of forms in the mineral kingdom. The fine soft chalk, the coarser lime-stones, the hard marbles, the transparent spars, the earthy matter contained in waters, and which separating from them, incrustates the sides of the caverns, or hangs in icicles from the top, receiving from its different appearances different appellations. How strongly soever some of these bodies have been recommended for particular medicinal purposes, they are at bottom no other than different forms of this calcareous earth; simple pulverization depriving them of the superficial characters by which they were distinguished in the mass. Most of them contain generally a greater or less admixture of some of the indissoluble kinds of earth; which, however, affects their medicinal qualities no otherwise than by the addition which it makes to their bulk. Chalk appears to be one of the purest; and is therefore in general preferred. They all burn into a strong quicklime: in this state a part of them dissolves in water, which thus becomes impregnated with the astringent and lithontriptic powers that have been erroneously ascribed to some of the earths in their natural state.

“During the calcination of calcareous earths, a large quantity of elastic vapour is discharged: the absence of this fluid is the cause of the causticity of quicklime, and of its solubility in water in the form of limewater. For a more full inquiry into this subject, see the articles *FIXED AIR, LIME-WATER, and CAUSTIC LEYS.*”

2. The animal calcareous earth: *burning into quicklime like the mineral.* Of this kind are oyster-shells, and all the marine shells that have been examined; though with some variation in the strength of the quicklime produced from them.

3. The earth of bones and horns: *not at all burning into quicklime.* This kind of earth is more difficult of solution in acids than either of the preceding. It is accompanied in the subjects with a quantity of gelatinous matter, which may be separated by long boiling in water, and more perfectly by burning in the open air. The earth may be extracted also from the bone or horn, though difficultly, by means of acids; whereas vegetables and the soft parts of animals yield their pure earth by burning only.

II. *Earths soluble with ease in the vitriolic as well as other acids, and yielding, in all their combinations therewith, saline concretes soluble in water.*

1. *Magnesia alba: composing with the vitriolic acid a bitter purgative liquor.* This earth has not yet been found naturally in a pure state. It is obtained from the purging mineral waters and their salts; from the bitter
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Liquor which remains after the crystallisation of sea-salt from sea-water; and from the fluid which remains uncrystallised in the putrefaction of some sorts of rough nitre. The ashes of vegetables appear to be nearly the same kind of earth.

2. Aluminous earth: *composing with the vitriolic acid a very astringent liquor.* This earth also has not been found naturally pure. It is obtained from alum; which is no other than a combination of it with the vitriolic acid: it may likewise be extracted, by strong boiling in that acid, from clays and boles.

III. *Earths which by digestion in acids, either in the cold or in a moderate warmth, are not at all dissolved.*

1. Argillaceous earth: *becoming hard, or acquiring an additional hardness, in the fire.* Of this kind of earth there are several varieties, differing in some particular properties: as the purer clays, which when moistened with water form a very viscous mass, difficultly diffusible through a larger quantity of the fluid, and slowly subsiding from it; boles, less viscous, more readily miscible with water, and more readily subsiding; and ochres, which have little or nothing of the viscosity of the two foregoing, and are commonly impregnated with a yellow or red ferrugineous calx.

2. Crystalline earth: *naturally hard, so as to strike sparks with steel; becoming friable in a strong fire.* Of this kind are flints, crystals, &c. which appear to consist of one and the same earth, differing in the purity, hardness, and transparency of the mass.

3. Gypseous earth: *reducible by a gentle heat into a soft powder, which unites with water into a mass, somewhat viscous and tenacious while moist, but quickly drying and becoming hard.* A greater heat deprives the powder of this property, without occasioning any other alteration. Such are the transparent selenite; the fibrous stony masses improperly called *English talc*; and the granulated gypsa, or plaster of Paris stones. Though these bodies, however, have been commonly looked upon as mere earths, of a distinct kind from the rest, they appear, both from analytical and synthetic experiments, to be no other than combinations of the mineral calcareous earth with vitriolic acid. See the Characters of the Earths of the first Class.

4. Talky earth: *scarcely alterable by a vehement fire.* The masses of this earth are generally of a fibrous or leafy texture; more or less pellucid, bright or glittering; smooth and unctuous to the touch; too flexible and elastic to be easily pulverised; soft, so as to be cut with a knife. In these respects some of the gypseous earths greatly resemble them, but the difference is readily discovered by fire; a weak heat reducing the gypseous to powder, while the strongest makes no other alteration in the talky, than somewhat diminishing their flexibility, brightness, and unctuousity.

III. METALS.

Of metals, the next division of mineral bodies, the most obvious characters are, their peculiar bright aspect, perfect opacity, and great weight; the lightest of them is six, and the heaviest upwards of nineteen times heavier than an equal bulk of water.

“To understand the writers in chemistry, it is proper to be informed, that

that metals are subdivided into the *perfect*, the *imperfect*, and the *semi-metals*.

“Those possessed of ductility and malleability, and which are not sensibly altered by very violent degrees of heat, are called *perfect metals*: Of these there are three; gold, silver, and platina. It is, however, probable, that the mark of their indestructibility by fire is only relative: and indeed modern chemists have been able, by a very intense degree of heat, to bring gold into the state of a *calx*, or something very nearly resembling it.

“Those metallic substances which possess the distinctive properties of the perfect metals, but in a less degree, are called the *imperfect metals*: These are, copper, iron, tin, lead.

“Lastly, those bodies having the metallic characters in the most imperfect state, that is to say, those which have no ductility and the least fixity in the fire, are distinguished by the name of *semi-metals*: These are, regulus of antimony, bismuth, zinc, regulus of cobalt, nickel, and regulus of arsenic; which last might be rather considered as the boundary between the metallic and the saline bodies.

“Mercury has been generally ranked in a class by itself.

“All metallic bodies, when heated in close vessels, melt or *fuse*. This *fusion* takes place at different degrees of heat in different metals; and it does not appear that this process produces any change in the metals, provided it be conducted in close vessels. Metals, exposed to the combined action of air and fire, are converted into an earth-like substance called *calx*: by this process, which we call *calcination*, the metal suffers remarkable changes. From the distinctive marks we have before given of the metallic bodies, it will be obvious, that the perfect metals are most slowly, the imperfect more quickly, and the semi-metals most easily and soonest affected in this operation. This earth-like powder, or *calx*, is found to possess no metallic aspect, but is considerably heavier than the metal before its calcination: it has no longer any affinity with metallic bodies, nor even with the metal from which it has been produced.

“Besides this method of calcining metals by air and fire, they may likewise be brought into the state of a *calx*, by dissolving them in acids, from which they may be afterwards freed by evaporating the acid, or by adding to the solution an alkaline salt. Metals are also sometimes dephlogisticated by detonation with nitre.” This change in their obvious properties is generally accompanied with a notable alteration in their medicinal virtues: thus quicksilver, which taken into the body in its crude state and undivided, seems inactive; when calcined by fire, proves, even in small doses, a strong emetic and cathartic, and in smaller ones, a powerful alterative in chronical disorders; while regulus of antimony, on the contrary, is changed by the same treatment, from a high degree of virulence to a state of inactivity.

Calces of mercury and arsenic exhale in a heat below ignition: those of lead and bismuth, in a red or low white heat, run into a transparent glass; the others are not at all vitrescible, or not without extreme vehemence of fire. Both the calces and glasses recover their metallic form and qualities again by the skillful addition of any kind of inflammable substance that does not contain a mineral acid. “This recovery of the metallic calces into

the metallic form is called *reduction*. During this process an elastic aerial fluid escapes, which is found in many instances to be very *pure air*.

“Is the conversion of metals into calces owing to the discharge of phlogiston, or to the absorption of pure air? And is the reduction to be ascribed to the absorption of phlogiston, or to the escape of pure air? And again, Is the calcination to be explained by the discharge of phlogiston and consequent precipitation of pure air? And is the reduction effected by the absorption of phlogiston, either furnished by inflammable bodies, or precipitated in consequence of the discharge of pure air? On these questions there is much dispute among modern chemists: We thought it only necessary to state them here, as a full inquiry into the subject is by no means the province of pharmacy. We, however, think it prudent to retain the doctrine of Stahl: and we do this the more readily, that it has been followed in the former editions of this work; that it is abundantly clear in its illustration of the pharmaceutical processes; and, lastly, that perhaps of the whole it is not the least unexceptionable. We shall not, however, reject any modern discovery which may serve to illustrate our subjects.”

All metallic bodies dissolve in acids; some only in particular acids, as silver and lead in the nitrous; some only in compositions of acids, as gold in a mixture of the nitrous and marine; and others, as iron and zinc, in all acids. Some likewise dissolve in alkaline liquors, as copper; and others, as lead, in expressed oils. Fused with a composition of sulphur and fixed alkaline salt, they are all, except zinc, made soluble in water.

All metallic substances, dissolved in saline liquors, have powerful effects in the human body, though many of them appear in their pure state to be inactive. Their activity is generally in proportion to the quantity of acid combined with them: Thus lead, which in its crude form has no sensible effect, when united with a small portion of vegetable acid into ceruss, discovers a low degree of the styptic and malignant quality, which it so strongly exerts when blended with a larger quantity of the same acid into what is called *saccharum saturni*: and thus mercury, with a certain quantity of the marine acid, forms the violent corrosive sublimate, which by diminishing the proportion of acid becomes the mild medicine called *mercurius dulcis*.

IV. ACIDS.

“The salts of this order are very numerous; but as we are at present treating of *Minerals*, it is only therefore the *mineral* or *fossil* acids we mean to speak of in this place.”

These are distinguished by the names of the concretes from which they have been principally extracted; the *vitriolic* from vitriol, the *nitrous* from nitre or saltpetre, and the *marine* or *muratic* from common sea-salt.

“The form they are commonly in, is that of a watery fluid: They have all a remarkable attraction for water: they imbibe the humidity of the air with rapidity and the generation of heat. Notwithstanding that heat is produced by their union with water, yet when mixed with ice in a certain manner, they generate a prodigious degree of cold. Acids change the purple and blue colours of vegetables to a red: they resist fermentation: and, lastly, they impress that peculiar sensation on the tongue called *sourness*, and which their name imports.” But it is to be observed, that they

are

are all highly corrosive, insomuch as not to be safely touched, unless largely diluted with water, or united with such substances as obtund or suppress their acidity. Mixed hastily with vinous spirits, they raise a violent ebullition and heat, accompanied with a copious discharge of noxious fumes: a part of the acid unites intimately with the vinous spirit into a new compound, void of acidity, called *dulcified spirit*. It is observable, that the marine acid is much less disposed to this union with spirit of wine than either of the other two: nevertheless, many of the compound salts resulting from the combination of earthy and metallic bodies with this acid, are soluble in that spirit, while those with the other acids are not. All these acids effervesce strongly with alkaline salts, both fixed and volatile, and form with them neutral salts; that is, such as discover no marks either of an acid or alkaline quality.

The nitrous and marine acids are obtained in the form of a thin liquor; the acid part being blended with a large proportion of water, without which it would be diffused into an incoercible vapour: the vitriolic stands in need of so much less water for its condensation as to assume commonly an oily consistence (whence it is called *oil of vitriol*), and in some circumstances even a solid one. Alkaline salts, and the soluble earths and metals, absorb from the acid liquors only the pure acid part; so that the water may now be evaporated by heat, and the compound salt left in a dry form.

From the coalition of the different acids with the three different alkalis, and with the several soluble earths and metallic bodies, result a variety of saline compounds; the principal of which will be particularised in the sequel of this work.

The vitriolic acid, in its concentrated liquid state, is much more ponderous than the other two; emits no visible vapours in the heat of the atmosphere, but imbibes moisture therefrom, and increases in its weight: the nitrous and marine emit copious corrosive fumes, the nitrous yellowish red, and the marine white ones. If bottles containing the three acids are stopp'd with cork, the cork is found in a little time tinged black with the vitriolic, corroded into a yellow substance by the nitrous, and into a whitish one by the marine.

It is above laid down as a character of one of the classes of earths, that the vitriolic acid precipitates them when they are previously dissolved in any other acid: it is obvious, that on the same principle this particular acid may be distinguished from all others. This character serves not only for the acid in its pure state, but likewise for all its combinations that are soluble in water. If a solution of any compound salt, whose acid is the vitriolic, be added to a solution of chalk in any other acid, the vitriolic acid will part from the substance it was before combined with, and join itself to the chalk, forming therewith a compound; which, being no longer dissoluble in the liquor, renders the whole milky for a time, and then gradually subsides.

This acid may be distinguished also, in compound salts, by another criterion not less strongly marked: If any salt containing it be mixed with powdered charcoal, and the mixture exposed in a close vessel to a moderate strong fire, the acid will unite with the directly inflammable part of the charcoal, and compose therewith a genuine sulphur. Common
brim-

brimstone is no other than a combination of the vitriolic acid with a small proportion of inflammable matter. With any kind of inflammable matter that is not volatile in close vessels, as the coal of vegetables, of animals, or of bitumens, this acid composes always the same identical sulphur.

The nitrous acid also, whatever kind of body it be combined with, is both distinguished and extricated therefrom by means of any inflammable substance brought to a state of ignition. If the subject be mixed with a little powdered charcoal, and made red-hot, a deflagration or fulmination ensues; that is, a bright flame with a hissing noise; and the inflammable matter and the acid being thus consumed or dissipated together, there remains only the substance that was before combined with the acid, and the small quantity of ashes afforded by the coal.

This property of the nitrous acid deflagrating with inflammable substances, and that of the vitriolic of forming sulphur with them, serve not only as criteria of the respective acids in the various forms and disguises, but likewise for discovering inflammable matter in bodies, when its quantity is too small to be sensible on other trials.

“All these acids will be more particularly examined when we come to treat of each of them apart. There are, however, a few other mineral acids which are of importance to be known: these are, *aqua regia*; *acid of borax*; *sparry acid*; and, lastly, *fixed air*, which has of late been called *aërial acid* or *acid of chalk*.

“*Aqua regia* has been generally prepared by a mixture of certain proportions of the nitrous and muriatic acids. It is of little avail in pharmacy, whether we consider it as a distinct acid, or only as a modification of the muriatic. It has been found, that the muriatic acid, when distilled with *manganese* (a peculiar fossile substance showing, as we speak, a remarkable attraction to phlogiston), suffers a change which renders it capable of dissolving gold and platinum. Whether this change is produced by the acid acquiring a redundancy of pure air, or by its being deprived of phlogiston, is not our business to decide. This experiment, however, renders it probable, that the nitrous acid in the common *aqua regia*, is only subservient to accomplishing the same change in the muriatic acid, which is produced by distilling that acid with manganese.

“As *aqua regia* has been only used in the rarer operations in chemistry, and in the art of assaying, we think it unnecessary to say more of it in this place.

“The *acid of borax*, or *sedative salt of Homberg*, may be extracted from borax, a neutral salt, with base of mineral alkali. It has also been found native in the waters of several lakes in Tuscany. It is a light, crystallised concrete salt: its taste is sensibly acid: it is difficultly soluble in water; but the solution changes blue vegetable colours to a red. With vitrescent earths it fuses into a white glass: it unites with the other alkalis, with magnesia, and with quicklime. The salts resulting from these combinations are very imperfectly known. This salt has been called *sedative*, from its supposed virtues as an anodyne and refrigerant remedy; but physicians now-a-days have very little faith in this once celebrated drug.

The *sparry acid* is so called, from its being extracted from a fossil called *sparry fluor*, or *vitreous spar*. It is not yet determined whether it is a distinct acid; and as it has not yet been employed for any purpose

in pharmacy, we think it would be improper to attempt any farther account of it here.

“ Besides the acids above mentioned, there have also been discovered acids seemingly of a particular nature, in amber, in arsenic, and in black-lead: but as these have not hitherto been applied to any use in pharmacy, they cannot properly have a place in this work.

“ We now come to the last, but perhaps the most generally diffused acid in nature: this is the aerial acid, or

Fixed Air.

“ In our pharmaceutical history of this body, we shall only make use of the two names, *fixed air* and *aërial acid*, being those most generally used, and which in our opinion are most applicable to our own subject. Fixed air is a permanently elastic fluid, being only *fixed* when in a state of combination with calcareous earth or other substances from which it may be extricated. It has received many different names, according to the substances from which it is disengaged, and the different opinions concerning its nature; it is the *gas sylvestre* of Helmont, the *fixed air* of Dr Black, the *acid of chalk*, *calcareous gas*, *mephitic gas*, *mephitic acid*, and *aërial acid*, of many modern chemists. In accommodating our account of it to the purposes of pharmacy, it is most convenient to consider it in the light of an acid. The aërial acid, then, may be extricated by heat, or by other acids, from all calcareous earths; that is, from all those earths which by calcination are converted into quicklime; such as chalk, marble, limestone, sea-shells, &c. It is likewise extricated from mild, fixed, and volatile alkalis, and from magnesia alba. Thus, if the vitriolic, or almost any other acid, is added to any quantity of calcareous earth or mild alkali, a brisk effervescence immediately ensues; the fixed air, or aërial acid, is discharged in bubbles; and the other acid takes its place. If this process is conducted with an apparatus, to be afterwards described, the aërial acid, now separated from the calcareous earth, may be received and preserved in close vessels. When thus disengaged, it assumes its real character, viz. that of a *permanently elastic fluid*. Fixed air is also separated in great quantity during the vinous fermentation of vegetable matters. When a calcareous earth is deprived of this acid by heat, it is converted into the caustic substance, *quicklime*. When alkalis, fixed or volatile, are deprived by any means of their aërial acid, they are rendered much more caustic, incapable of crystallisation or of effervescing with other acids. They are also in this *deærated* state much more powerful in dissolving other bodies. By recombining this acid to the quicklime, the calcined magnesia, or to the alkali, any of which had been deprived of it, these substances again assume their former weight and properties. These bodies, then, when combined with aërial acid, are called *mild*; as *mild calcareous earth*, *mild alkalis*, &c.: and when deprived of this acid, they are called *caustic*; as *caustic calcareous earths*, *caustic alkalis*, &c.: but as magnesia is not rendered caustic by calcination, there would perhaps be less danger in calling them *aërated* and *deærated*. The aërial acid is more disposed to unite with caustic calcareous earth (quicklime) than with any other substance; next to that, its attraction stands for fixed alkalis; then with magnesia; and, lastly, with volatile alkali. We shall afterwards find that these relative

powers of the different substances to unite with this acid, lay the foundation of many important processes in pharmacy.

“ When we pour a small quantity of the aërial acid into lime-water, the liquor instantly assumes a white colour, and the lime gradually precipitates, leaving the water clear and tasteless: the lime in this experiment has absorbed the acid, and has therefore become *mild* or *aërated* earth. The aërial acid is capable of being absorbed by water; and the water thus impregnated, precipitates lime in lime-water: but if a certain larger quantity of this impregnated water is added, the lime is redissolved, and the liquor recovers its transparency. Water impregnated with aërial acid is capable of dissolving iron; and in this way are formed native and artificial chalybeate waters. Zinc is also soluble in the same liquor. This acid is easily expelled from the water by removing the pressure of the atmosphere, by boiling, and even by time alone, if the vessel is not kept close shut. Fixed air extinguishes flame, vegetable and animal life, and ought therefore to be cautiously managed: like other acids, it changes the blue colours of vegetables to a red, and communicates an acidulous taste to the water impregnated with it. The attraction of the aërial acid, even to quicklime, is but feeble; as we know of no other acids whatever that are not able to disengage it.

“ From these several facts, it will appear obvious, that *mild* or *effervescing alkalis*, whether fixed or volatile, are really neutral salts, compounded of the aërial acid and pure alkali: like other acids, it unites with these bodies, diminishes their causticity, and effects their crystallization. In speaking therefore of *pure alkalis*, we ought to confine ourselves to those in the *caustic* or *deaërated* state; or, in other words, to those which are deprived of their fixed air or aërial acid, with which they formed a compound salt. Many other properties of this acid might be mentioned, but we have now noticed all those which we thought were concerned in the business of pharmacy. We shall have occasion to recur to the subject when we come to the preparation of several compound drugs.

“ Let us next take a view of what passes in the combinations of acids with different substances.”

If a fixt alkaline salt be united with a vegetable acid, as that of vinegar, into a neutral salt; on adding to this compound some marine acid, the acetic acid will be disengaged, so as to exhale totally in a moderate heat, leaving the marine in possession of the alkali: the addition of the nitrous will in like manner dispossess the marine, which now arises in its proper white fumes, though without such an addition it could not be extricated from the alkali by any degree of heat: on the addition of the vitriolic acid, the nitrous gives way in its turn, exhaling in red fumes, and leaving only the vitriolic acid and the alkali united together.

Again, if any metallic body be dissolved in an acid, the addition of any earthy body that is dissoluble in that acid will precipitate the metal: a volatile alkaline salt will in like manner precipitate the earth: and a fixt alkali will dislodge the volatile; which last being readily exhalable by heat, the remaining salt will be the same as if the acid and fixt alkali had been joined together at first, without the intervention of any of the other bodies.

THE power in bodies, on which these various transpositions and combinations depend, is called by the chemists *affinity* or *elective attraction*; a term,

term, like the Newtonian *attraction*, designed to express, not the cause, but the effect. When an acid spontaneously quits a metal to unite with an alkali, they say it has a greater affinity or attraction to the alkali than to the metal: and when, conversely, they say it has a greater affinity to fixt alkalis than to those of the volatile kind, they mean only that it will unite with the fixt in preference to the volatile; and that if previously united with a volatile alkali, it will forsake this for a fixt one.

The doctrine of the affinities of bodies is of very extensive use in the chemical pharmacy: many of the officinal processes, as we shall see hereafter, are founded on it: several of the preparations turn out very different from what would be expected by a person unacquainted with these properties of bodies; and several of them, if, from an error in the process, or other causes, they prove unfit for the use intended, may be rendered applicable to other purposes, by such transpositions of their component parts as are pointed out by the knowledge of their affinities.

I shall here therefore subjoin a table of the principal affinities observed in pharmaceutical operations, formed chiefly on that of Mr Geoffroy (which was published in the Memoirs of the French academy for the year 1718), with such corrections and additions as later experiments have furnished.

The table is thus to be understood. The substance printed in capitals, on the top of each series, has the greatest affinity with that immediately under it, a less affinity with the next, and so on to the end of the series: that is, if any of the remote bodies has been combined with the top one, the addition of any of the intermediate bodies will disunite them; the intermediate body uniting with the uppermost body of the series, and throwing out the remote one. Thus in the first series of the affinities of water, a fixt alkali being placed between the water and inflammable spirit, it is to be concluded, that wherever water and spirit are mixed together, the addition of any fixt alkaline salt will absorb the water, and occasion the pure spirit to be separated. Where several substances are expressed in one series, it is to be understood, that any one of those bodies, which are nearest to the uppermost, will in like manner disengage from it any one of those which are more remote.

1. WATER.

Fixt alkaline salt,
Inflammable spirit.

2. WATER.

Inflammable spirit,
Volatile alkaline salt.

3. WATER.

Inflammable spirit,
Sundry compound salts.

4. INFLAMMABLE SPIRIT.

Water,
Oils and Resins.

5. VITRIOLIC ACID.

Inflammable principle,
Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous earths uncalcined,
Zinc and iron,
Copper,
Silver.

6. NITROUS ACID.

Inflammable principle,
Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous earths uncalcined,
Zinc,
Iron,
Copper,
Lead,
Mercury,
Silver,
Camphor.

7. MARINE ACID.

Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous earths uncalcined,
Zinc,
Iron,

Tin,
Regulus of antimony,
Copper,
Lead,
Silver,
Mercury.

8. ACETOUS ACID.

Iron,
Copper.

9. ALKALINE SALTS.

Vitriolic acid,
Nitrous acid,
Marine acid,
Vinegar,
Tartar,
Aërial acid,
Oils and Sulphur.

10. SOLUBLE EARTHS.

Vitriolic acid,
Nitrous acid,
Marine acid.

11. INFLAMMABLE PRINCIPLE.

Nitrous acid,
Vitriolic acid,
Metallic substances,
Fixt alkaline salts.

12. SULPHUR.

Fixt alkali and Quicklime,
Iron,
Copper,
Lead,
Silver,
Regulus of Antimony,
Mercury,
Arsenic.

13. GOLD.

Ethereal spirit,
Acids.

14. MERCURY.

Marine acid,

Vitriolic acid,
Nitrous acid.

15. LEAD.

Vitriolic acid,
Marine acid;
Nitrous acid,
Vinegar,
Oils.

16. SILVER.

Marine acid,
Vitriolic acid,
Nitrous acid.

17. COPPER.

Vitriolic acid,
Marine acid,
Nitrous acid.

18. IRON.

Vitriolic acid,
Marine acid,
Nitrous acid.
Aërial acid,

19. REGULUS of ANTIMONY.

Vitriolic acid,
Nitrous acid,
Marine acid.

“WE think it may be useful to insert here another Table of single elective attractions, formed from a later and more complete knowledge of the subject. It is taken from Dr Webster's Syllabus; and as it principally concerns those bodies employed in pharmacy, we think it peculiarly adapted for this work. We have, however, delivered it in the common nomenclature of the art. The Doctor's method is more short, and may be seen in the Syllabus alluded to, and which we have inserted in this work.”

TABLE OF ATTRACTIONS,

BY WATER.

{ Vitriolic acid, Nitrous acid, Muriatic acid. }	Tartarous acid.	Vinegar.	Acid of Borax, or Sedative Salt.
Terra ponderosa, Vegetable alkali, Mineral alkali, Lime, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Mercury, Silver, Water, Alcohol, Phlogiston.	Lime, Terra ponderosa, Magnesia, Vegetable alkali, &c.		Lime, Terra ponderosa, Magnesia, Vegetable alkali, &c.

BY HEAT.

Phlogiston, Terra ponderosa, &c. Magnesia, Metallic substan- ces, Volatile alkali, Clay.			
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TABLE

TABLE of ATTRACTIONS *continued.*

BY WATER.

{ Fixed Air, or Aërial Acid.	{ Vegetable Alkali, Mineral Alkali, Volatile Alkali, Terra Ponderosa.	Lime.	{ Magnesia, Clay.
Terra ponderosa, Lime, Vegetable alkali, &c. Alcohol, Essential oil, Unctuous oil.	Vitriolic acid, Nitrous acid, Muriatic acid, Tartarous acid, Vinegar, Acid of borax, Fixed air, Unctuous oils, Brimstone, Metallic sub- stances, Water,	Vitriolic acid, Tartarous acid, Nitrous acid, Muriatic acid, &c.	

BY HEAT.

	Acid of borax, Vitriolic acid, &c.		
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TABLE of ATTRACTIONS *continued*.

BY WATER.

Phlogiston.	Brimstone.	Hepar Sulphuris.	Alcohol.
Nitrous acid, Vitriolic acid, Marine acid de- phlogistified by manganese, Silver, Mercury, Antimony, Copper Tin, Lead, Iron, Zinc, Water.	Lead, Tin, Silver, Mercury, Antimony, Iron, Fixed alkalis, Volatile alkali, Terra ponderosa, Lime, Magnesia, Unctuous oils, Essential oils, Dulcified spirit of vitriol, Alcohol.	Silver, Mercury, Antimony, Copper, Tin, Lead, Iron, Alcohol, Water.	Water, Dulcified spirit of vitriol, Essential oils, Volatile alkali, Fixed alkalis, Hepar sulphuris, Brimstone.

TABLE

TABLE of ATTRACTIONS *continued.*

BY WATER.

Dulcified Spirit of Vitriol.	Essential Oils.	Unctuous Oils.	Zinc calcined.
Alcohol, Essential oils, Unctuous oils, Water, Brimstone	Dulcified spirit of vitriol, Alcohol, Unctuous oils, Water, Brimstone.	Dulcified spirit of vitriol, Essential oils, Fixed alkalis, Volatile alkali, Brimstone.	Vitriolic acid, Muriatic acid, Nitrous acid, Tartarous acid, Vinegar, Acid of borax, Fixed air.

TABLE

TABLE of ATTRACTIONS *continued.*

BY WATER.

Iron.	Lead.	Tin.	Copper.
Tartarous acid, Vitriolic acid, &c.	Vitriolic acid, Tartarous acid, Muriatic acid, &c. Fixed alkalis, Unctuous oils.		Tartarous acid, Muriatic acid, Vitriolic acid, Nitrous acid, &c. Fixed alkalis, Volatile alkali, Unctuous oils.

TABLE

TABLE of ATTRACTIONS *continued*,

BY WATER.

Antimony.	Mercury.	Silver.	Water.
Muriatic acid, Vitriolic acid, &c.	Muriatic acid, Vitriolic acid, Tartarous acid, Nitrous acid, &c.	Muriatic acid, Vitriolic acid, &c.	Vegetable alkali, Mineral alkali, Volatile alkali, Alcohol.

“ BESIDES these cases of single elective attraction, there are also cases of what is called *double elective attraction*. These compose a table, in all the cases of which there are two compounds decomposed, and two new ones produced in their stead. We shall take for our example the first case in our table: If a plate of iron is put into a solution of vitriol of copper, the acid of the vitriol quits the copper and seizes upon the iron, whilst the phlogiston of the iron attaches itself to the calx of the copper. We have now, then, a vitriol of iron and metallic copper; that is to say, instead of vitriol of copper and a plate of iron, we have now a plate of copper and a vitriol of iron. As all chemical compositions and decompositions depend on these single or double elective attractions, we shall, for the sake of those more advanced in the study of chemistry, here subjoin a Table of Double Elective Attractions, extracted from the Syllabus of Dr Webster: But as his terms may appear difficult to beginners, we have illustrated the several cases by a single familiar example from each division.”

Case

Cases of DOUBLE Elective Attraction.

By WATER.

1. Phlogistified iron with Vitriolated copper,
2. Acidated earth or metal with Aërated alkali,
3. Acidated volatile alkali with Aërated fixed alkali or earth.
4. Vitriolated alkali, magnesia, or clay, with Nitrated, salited, or acetated lime,
5. Vitriolated or salited alkali or earth with Nitrated or acetated lead, mercury, or silver,
6. Vitriolated, nitrated, or acetated alkali, earth, or metal, with Salited silver,
7. Vitriolated vegetable alkali with Salited lime, lead, or silver,
8. Tartarified or acetated vegetable alkali, with Nitrated mercury,

Give

1. Phlogistified copper and Vitriolated iron.
2. Acidated alkali and Aërated earth or metal.
3. Acidated fixed alkali or earth and Aërated volatile alkali.
4. Vitriolated lime and Nitrated, salited, or acetated alkali, magnesia, or clay.
5. Vitriolated or salited lead, mercury, or silver, and Nitrated or acetated alkali or earth.
6. Vitriolated, nitrated, or acetated silver, and Salited alkali, earth, or metal.
7. Vitriolated lime, lead, or silver, and Salited vegetable alkali.
8. Tartarified or acetated mercury and Nitrated vegetable alkali.

By HEAT.

1. Vitriolated volatile alkali with Nitrated, salited, or acetated fixed alkali,
2. Vitriolated, nitrated, or salited volatile alkali with Acetated flint, alkali, or lime,
3. Vitriolated mercury with Salited mineral alkali,
4. Salited mercury with Sulphurated antimony,

Give

1. Vitriolated fixed alkali, and Nitrated, salited, or acetated volatile alkali.
2. Vitriolated, nitrated, or salited fixed alkali, or lime, and Acetated volatile alkali,
3. Vitriolated mineral alkali and Salited mercury.
4. Salited antimony and Sulphurated mercury.

Familiar Examples of a single Case in each of the opposite Divisions.

By WATER.

1. Iron in its metallic state with Vitriol of copper,
2. Epsom salt with Mild vegetable alkali,
3. Vitriolic ammoniac with Mild mineral alkali,
4. Vitriolated tartar with Nitrous selenite,
5. Vitriolated tartar with Mercurial nitre,
6. Saltpetre with Luna cornea,
7. Vitriolated tartar with Luna cornea,
8. Regenerated tartar with Mercurial nitre,

Give

1. Copper in its metallic state and Vitriol of iron.
2. Vitriolated tartar and Common magnesia.
3. Glauber's salt and Mild volatile alkali.
4. Vitriolic selenite and Saltpetre.
5. Vitriol of mercury and Saltpetre.
6. Lunar caustic and Cubic nitre.
7. Vitriol of silver and Febrifugal salt.
8. Acetous mercurial salt and Saltpetre.

By HEAT.

1. Vitriolic ammoniac with Common salt,
2. Vitriolic ammoniac with Regenerated tartar,
3. Vitriol of mercury with Common salt,
4. Crude antimony with Sublimate corrosive mercury,

Give

1. Common sal ammoniac and Glauber's salt.
2. Acetous ammoniacal salt and Vitriolated tartar.
3. Glauber's salt and Sublimate corrosive mercury.
4. Butter of antimony and Factitious cinnabar.

CHAPTER II.

Of the Pharmaceutic Apparatus.

ONE of the principal parts of the pharmaceutic apparatus consists in contrivances for containing and applying fire, and for directing and regulating its power. Of these contrivances, called *furnaces*, there are different kinds, according to the conveniency of the place, and the particular purposes they are intended to answer. I shall here endeavour to give a general idea of their structure, and of the principles on which they are built.

FURNACES.

THE most simple furnace is the common stove, otherwise called the furnace for OPEN FIRE. This is usually made of an iron hoop, five or six inches deep; with a grate or some iron bars across the bottom, for supporting the fuel. It either stands upon feet, so as to be moveable from place to place; or is fixt in brickwork. In this last case, a cavity is left under the grate, for receiving the ashes that drop through it; and an aperture or door, in the forepart of this ash-pit, serves both for allowing the ashes to be occasionally raked out, and for admitting air to pass up through the fuel. This furnace is designed for such operations as require only a moderate heat; as infusion, decoction, and the evaporation of liquids. The vessel, containing the subject matter, is supported over the fire by a trevet. Fig. 1.

A deeper hoop or body, cylindrical, parallelopipedal, widening upwards, elliptical, or of other figures; formed of, or lined with, such materials as are capable of sustaining a strong fire; with a grate and ash-pit beneath, as in the preceding; and communicating at the top with a perpendicular pipe, or chimney; makes a WIND FURNACE. Fig. 2.

The greater the perpendicular height of the chimney, the greater will be the draught of air through the furnace, and the more intensely will the fire burn; provided the width of the chimney is sufficient to allow a free passage to all the air that the furnace can receive through the grate; for which purpose, the area of the aperture of the chimney should be nearly equal to the area of the interstices of the grate.

Hence, where the chimney consists of moveable pipes, made to fit upon one another at the ends, so that the length can be occasionally increased or diminished, the vehemence of the fire will be increased or diminished in the same proportion.

In furnaces whose chimney is fixed, the same advantage may be procured on another principle. As the intensity of the fire depends wholly upon the quantity of air successively passing through and animating the burning fuel, it is obvious, that the most vehement fire may be suppressed or restrained at pleasure, by more or less closing either the ash-pit door by which the air is admitted, or the chimney by which it passes off; and that

that the fire may be more or less raised again, by more or less opening those passages. A moveable plate, or REGISTER, in any convenient part of the chimney, affords commodious means of varying the width of the passage, and consequently of regulating the heat. "This is most conveniently accomplished by keeping the ash-pit door entirely shut, and regulating the heat by a range of holes in a damping plate; each hole is provided with a proper pin, whereby we may shut it at pleasure. These holes may be made to bear a certain proportion to one another; the smallest being considered as one, the next to it in size must have twice the opening, the next to that double of the second, &c.; and so on to the number of seven or eight; and by combining these holes variously together, we can admit any quantity of air from 1 to 128; as 1. 2. 4. 8. 16. 32. 64. 128. See Fig. 7. and 8."

THERE are two general kinds of these wind-furnaces; one, with the chimney on the top, over the middle of the furnace, (fig. 2.); the other, with the chimney on one side, and the mouth clear, (fig. 3.)

In the first, either the upper part of the furnace is contracted to such an aperture, that the chimney may fit upon it; or it is covered with an arched dome, or with a flat plate, having a like aperture in the middle. As in this disposition of the chimney, the inside of the furnace cannot be come at from above, a door is made in the side, a little above the grate, for supplying fuel, inspecting the matter in the fire, &c. Fig. 2.

For performing FUSIONS in this furnace, the crucible, or melting vessel, is placed immediately among the fuel, with a slip of brick, or some other like support, between it and the grate, to keep the cold air, which enters underneath, from striking on its bottom.

When designed as a REVERBERATORY, that is for distillation in long necks or coated glass retorts, two iron bars are placed across, above the fire, for supporting the vessel, whose neck comes out at an aperture made for that purpose in the side. This aperture should be made in the side opposite to that in which is the door above mentioned; or at least so remote from it, that the receiver, fitted on the neck of the distilling vessel without the furnace, may not lie in the operator's ways when he wants to stir the fire or throw in fresh fuel. Fig. 4.

The other kind of wind-furnace communicates, by an aperture in its back part near the top, either with an upright pipe of its own, or with the chimney of the room; in which last case, all other passages into the chimney must be closed up. Here the mouth of the furnace serves for a door, which may be occasionally covered with a plate or tile. Of this kind is the furnace most commonly used for fusion in a crucible. Fig. 3.

THIS last construction, by leaving the mouth of the furnace clear, affords the conveniency of letting into it a boiling or evaporating pan, a copper still, an iron pot for distilling hartshorn, an iron sand-pot, or other like vessels, of such a size that they may be supported on the furnace by their rims. The mouth being thus occupied by the vessels, a door must be made in the side for supplying and stirring the fuel.

When a furnace of this kind is designed only for a *sand-bath*, it is most commodious to have the sand placed on a long iron plate furnished with a ledge of freestone or brick-work at each side. The mouth of the furnace

is

is to be closely covered by one end of this plate; and the canal by which the furnace communicates with its chimney, is to be lengthened and carried along under the plate, the plate forming the upper side of the canal. In this kind of sand-bath, digestions, &c. requiring different degrees of heat, may be carried on at once; for the heat decreases gradually from the end over the furnace to the other. Fig. 5.

When large vessels, as *stills* and iron-pots for distilling hartshorn and aquafortis, are fixed in furnaces, a considerable part of the bottom of the vessel is commonly made to rest upon solid brick work.

The large still, whose bottom is narrow in proportion to its height, and whose weight, when charged with liquor, requires great part of it to be thus supported, exposes but a small surface to the action of the fire underneath. To make up for this disadvantage, the heat, which rises at the further end of a long narrow grate, is conveyed all round the sides of the vessel by a spiral canal, which communicates at top with a common chimney.

The pots for distilling hartshorn and aquafortis in the large way, have part of their great weight borne up by three strong pins or trunions at equal distances round the pot towards the middle reaching into a brick-work: so that less support being necessary underneath, a greater surface of the wide bottom lies exposed to the immediate action of the fire.

If a furnace, communicating with its chimney by a lateral canal, as in the sand-furnace above mentioned, be carried to a considerable height above the part where this canal enters it, and if it be filled with fuel to the top, and closely covered, the fuel will burn no higher than up to the upper side of the canal through which the air passes off; and in proportion as this lower part of the fuel consumes, it will be supplied by that above, which falls down in its place. Hence in this furnace, called an *athanor*, a constant heat may be kept up for a considerable length of time without attendance. Fig. 6.

The tower of the *athanor*, or that part which receives the fuel, is commonly made to widen a little downwards, that the coals may fall the more freely; but not so much as that the part on fire at bottom may be too strongly pressed. A small aperture is made opposite to the canal or flue, or a number of openings according to the size of the furnace and the degree of heat required, for supplying the air, which is more conveniently admitted in this manner than through the grate, as the interstices of the grate are in time choked up by the ashes.

This furnace is designed only for heating bodies exterior to it. Its canal or flue, as in the sand-furnace already described, passes under a sand-bath or water-bath; at the farther end of which it rises perpendicularly to to such a height, as may occasion a sufficient draught of air through the fire.

The flue may be so wide as to correspond to the whole height of the fire-place. A register, or sliding plate, placed between the flue and the furnace, enables us to increase or diminish this height, and consequently the quantity of fire, at pleasure. If the space beneath the flue be inclosed to the ground, the heat in this cavity will be considerable enough to be applicable to some useful purposes.

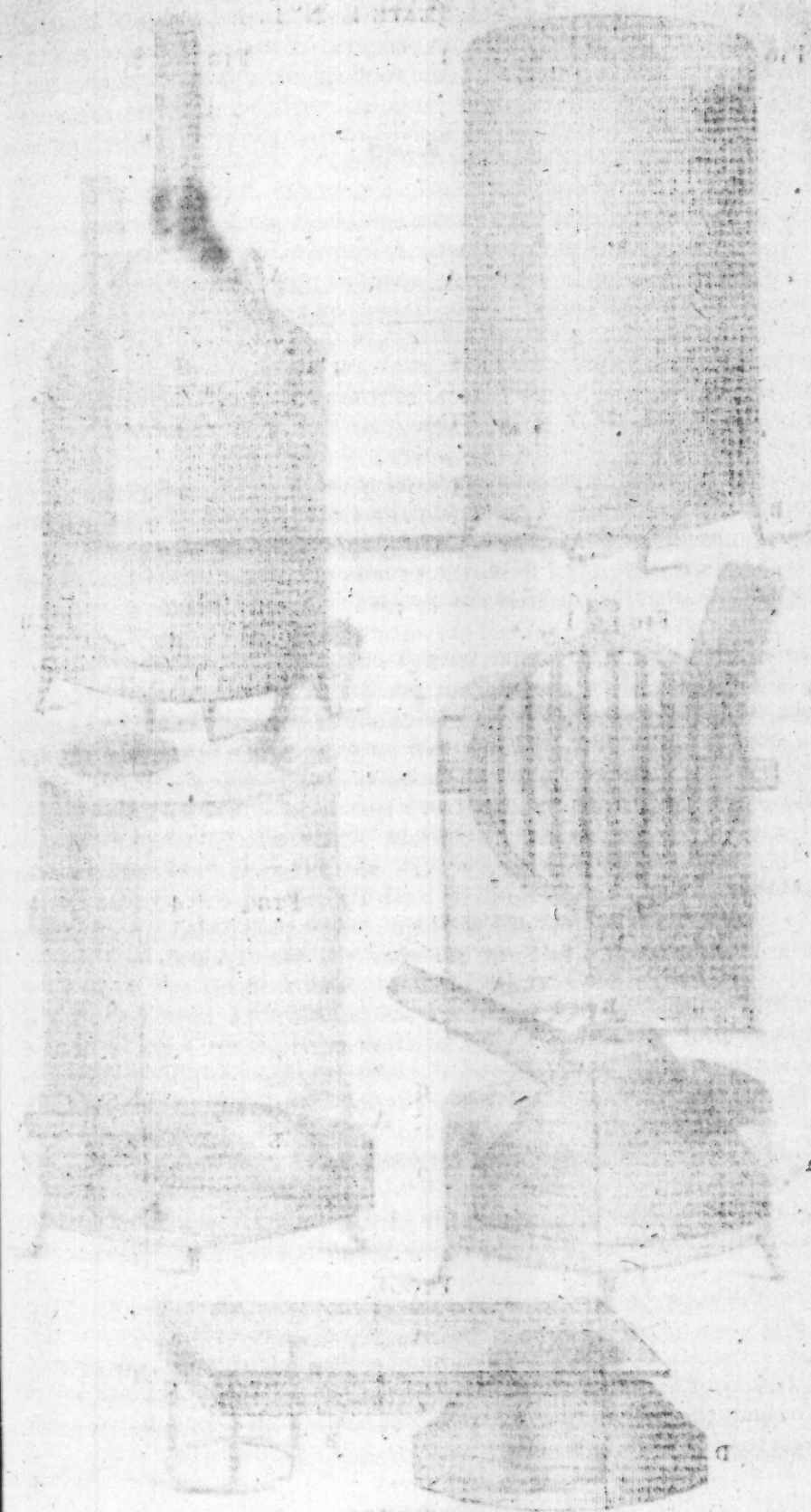
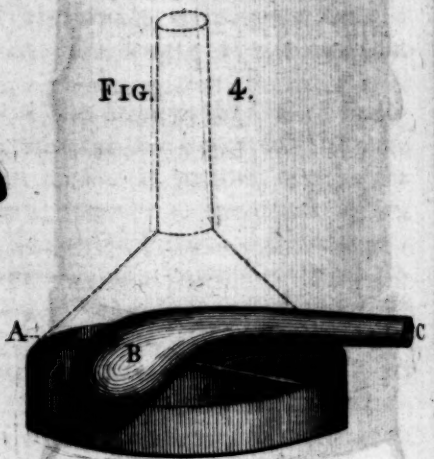
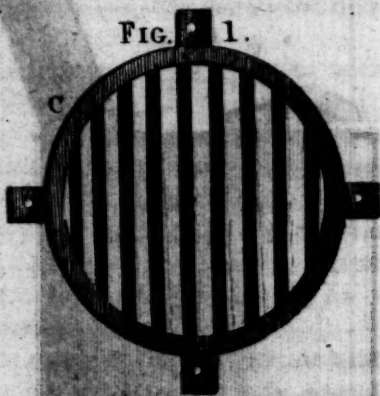
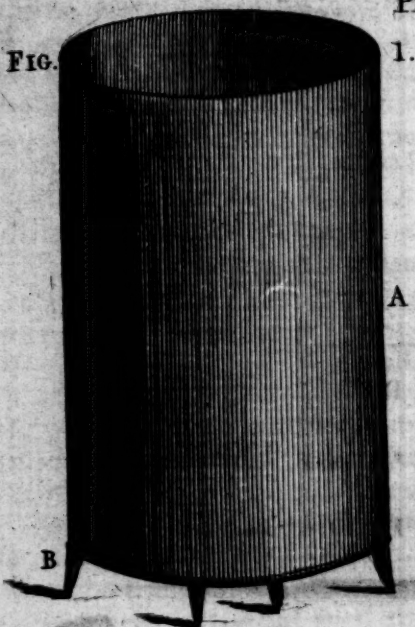


PLATE I. N^o 1.



D. Lizzaro Sculp.

FIG. 6.

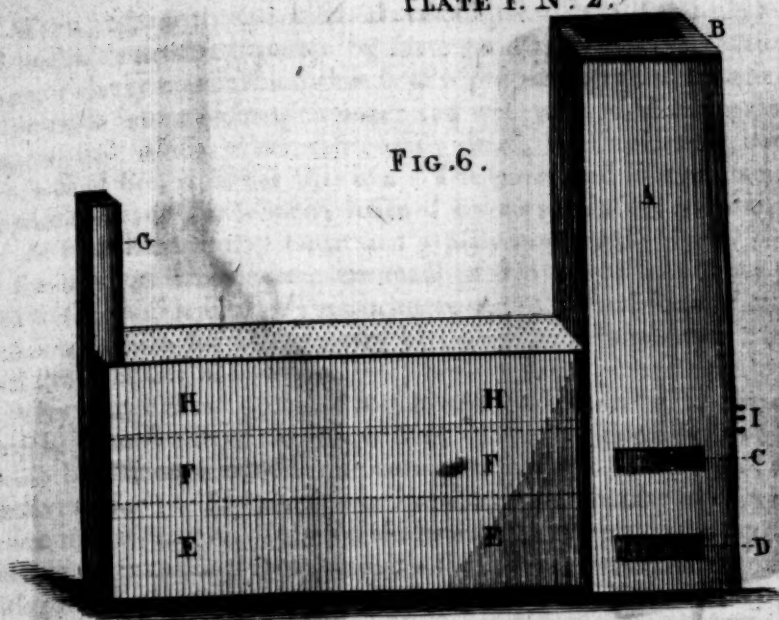


FIG. 7.

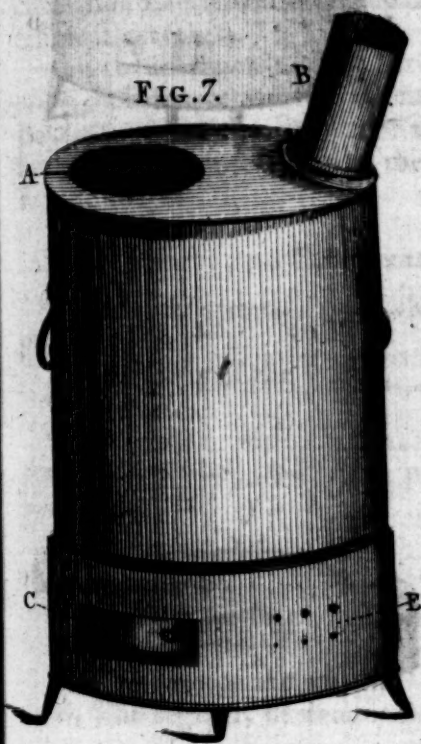


FIG. 8.

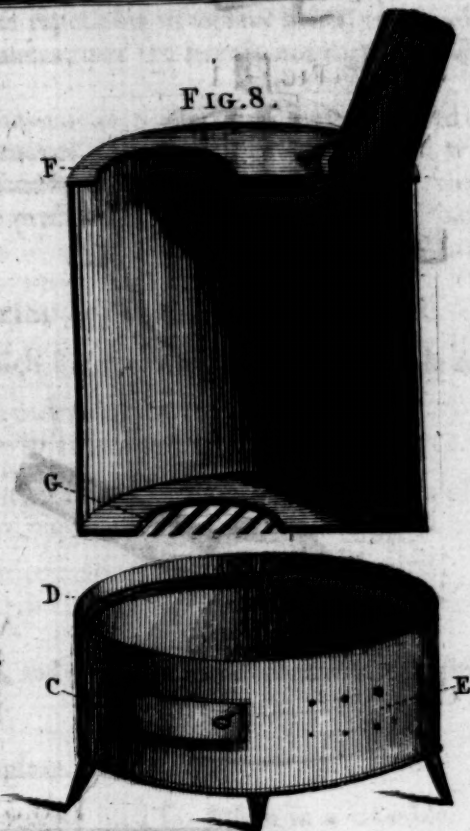
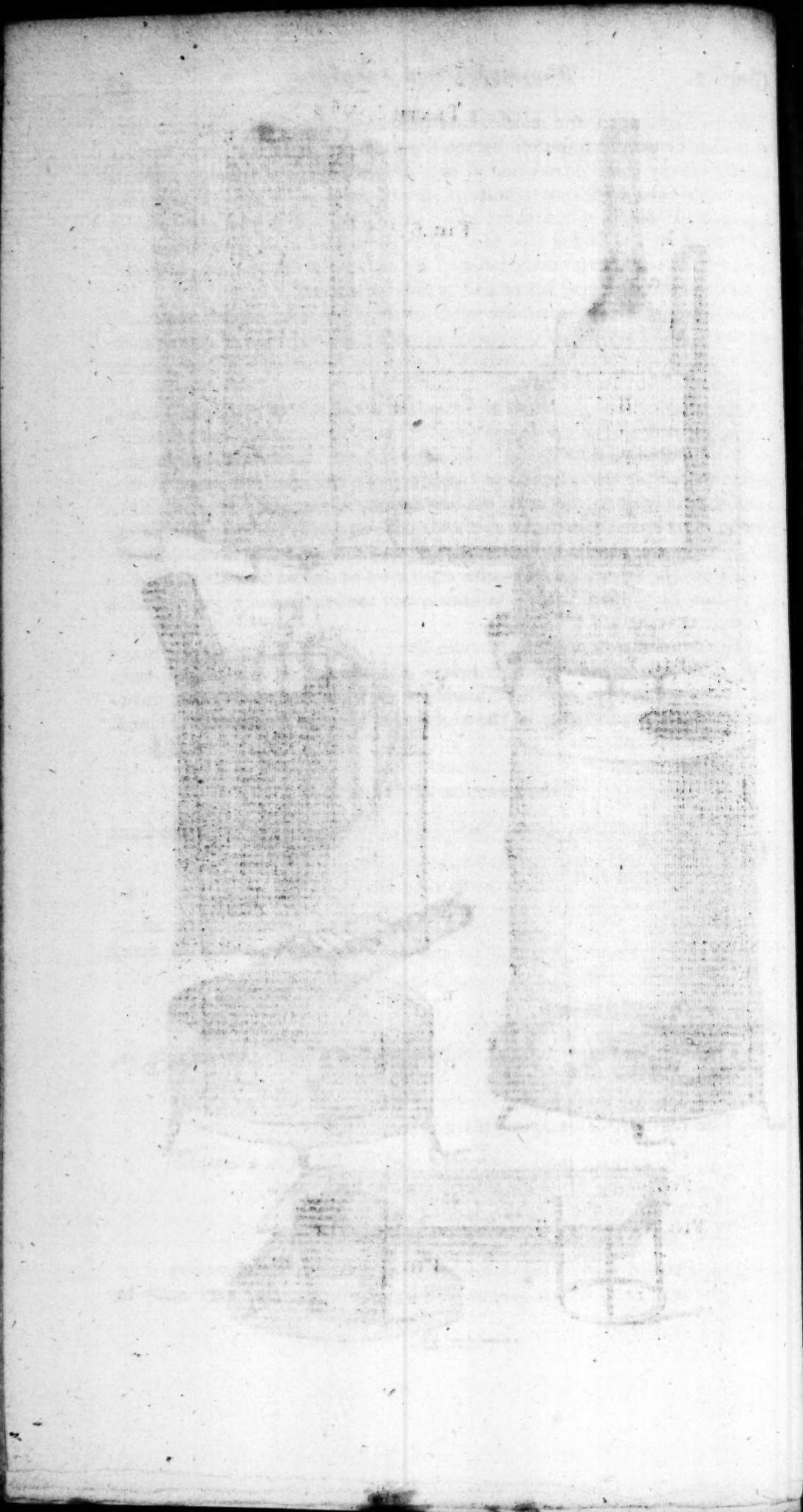


FIG. 9.



FIG. 10.





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With regard to the materials of furnaces, the fixed ones are built of bricks, cemented together by some good loam or clay. Any kind of loam or clayey composition that is of a proper degree of tenacity, which, when made into a paste with water and well-worked, does not stick to the fingers, and which, when thoroughly dried, neither cracks nor melts in a vehement fire, is fit for this use. The purer and more tenacious clays, require to have their tenacity lessened by an admixture of sand, or rather of the same kind of clay burnt and grossly powdered.

Smaller portable furnaces are made of strong iron or copper plates, lined to the thickness of an inch or more with the same kind of clayey composition; which for this use may be beaten with some horse-dung, chopped straw, or cut hair or tow.

Very commodious portable furnaces, for a business of moderate extent, may be formed also of the larger kind of the common black-lead melting-pots; by cutting a door at the bottom of the pot for the ash-pit, another above this for the fire-place, and introducing a circular iron grate of such a size that it may rest between the two doors. A particular account of the method of preparing these furnaces for different uses may be seen in the first part of the *Commercium Philosophico-technicum*, lately published: "They are, however, liable, by the repetition of violent heats, to a kind of calcination like inflammable substances; and the heat is not regulated with sufficient exactness.

"In consideration of these inconveniences, Dr Black has contrived one of the most simple and elegant furnaces that we are yet acquainted with. Besides its durability, it will be found, though but one instrument, to answer all the purposes either of the practical or speculative chemist. Plate I. Fig. 7. and 8.

EXPLANATION of PLATE I.

"Fig. 1. A common stove which stands on feet, and is moveable from place to place.

A, The body of the stove.

B, Its feet.

C, The grate, which is that used in Dr Black's furnace, to be afterwards described, and which we would recommend as the best for every kind of portable furnace.

Fig. 2. A wind-furnace.

A, Its dome.

B, The door for supplying fuel, and placing the matter to be wrought on.

C, The chimney.

D, The door of the ash-pit.

E, The register, or damping-plate.

Fig. 3. The furnace most commonly used for fusion in a crucible.

A, The beginning of its chimney from the back-part.

B, The mouth of the furnace, serving as the door.

C, The register.

Fig. 4. Plan of a wind-furnace when designed for a reverberatory.

A, The iron bars, which cannot well be shown, but may very easily be conceived.

B, A retort, supported on the bars.

C, The neck of the retort, coming out at an aperture of the furnace in the opposite side of the door B, Fig. 2.

Fig. 5. Plan of a wind-furnace when designed for a sand-bath.

A, A long iron plate, one end of which closely shuts the mouth of the furnace.

B, A ledge of free-stone or brick-work.

C, The mouth of the canal.

D, The door for admitting fuel.

Regillers, &c. as in the other furnaces,

Fig. 6. An athanor.

A, The tower, which has a cover at the top B when used.

C, The fire-place.

D, The ash-pit.

E, E, An oblong frame of metal or stone connected to the tower A.

F, F, A chamber connected to the fire-place C, and continued up to the chimney G. Above this chamber the rest of the frame is lined with iron.

H, H, Which being covered with sand, and heated by the long range of fire in the chamber below, forms the sand-heat.

I, The Register.

“ Fig. 7. and 8. Dr Black's furnace *. To render our description of this instrument as simple as possible, let the reader suppose that the body of the common stove, fig. 1. is made of an oval form, and closed at each end by a thick iron plate. The upper plate or end of the furnace is perforated with two holes: one of these, A, is pretty large, and is often the mouth of the furnace; the other hole, B, is of an oval form, and is intended for screwing down the vent upon.

“ The undermost plate or end of the furnace has only one circular hole, somewhat nearer to one end of the ellipse than the other; hence a line passing through the centre of both circular holes has a little obliquity forwards: this is shown in fig. 8. which is a section of the body of the furnace, and exhibits one half of the upper and one half of the under nearly corresponding holes. The ash-pit, fig. 7. and 8. C, is made of an elliptical form like the furnace; but is somewhat wider, so that the bottom of the furnace goes within the brim; and a little below there is a border, D, fig. 8. that receives the bottom of the furnace. Except the holes of the damping-plate E, fig. 7. and 8. the parts are all close by means of a quantity of soft lute, upon which the body of the furnace is pressed down, whereby the joining is made quite tight: for it is to be observed, that in this furnace the body, ash-pit, vent, and grate, are all separate pieces, as the furnace comes from the hands of the workman. The grate C, fig. 1. is made to apply to the outside of the lower part or circular hole: it consists of a ring set upon its edge, and bars likewise set on their edges. From the outer-part of the ring proceed four pieces of iron,

* Those who wish to be provided with Dr Black's furnace, may apply to Mr John Sibbald in College wynd, Edinburgh. They may be procured, of different sizes, from L. 1 : 10s. to L. 2 : 10s. price. This gentleman has had the advantage of making these instruments under the immediate inspection of Dr Black.

iron, by means of which it can be screwed on: it is thus kept out of the cavity of the furnace, and preserved from the extremity of the heat, whereby it lasts much longer. The sides of the furnace are luted, to confine the heat, and to defend the iron from the action of it. The luting is so managed, that the inside of the furnace forms in some measure the figure of an inverted truncated cone.

"We have thus combined the two figures 7. and 8. in order to describe as exactly as possible this furnace in its entire state; but to prevent confusion, it must be understood, that fig. 7. represents the body of the furnace with its bottom received within the ash-pit. As in this figure, then, we could not exhibit the bottom of the furnace, we have in fig. 8. supposed the body of the furnace to be cut down through its middle; whereby one half of the undermost hole, with a proportional part of the grate G applied to it, is exhibited along with; and nearly opposed to, one half of the upper hole F; the same hole which in fig. 7. is represented in its entire state by A. By Fig. 8. then, the relation of the upper and under holes to one another is explained. It is also to be understood, that the ash-pit of fig. 8. is not, like the body of the furnace, divided in its middle, but is the ash-pit of fig. 7. only detached from the bottom of the furnace, in order to represent the border D, on which the bottom of the furnace is received.

"Now to adapt this furnace to the different operations in chemistry, we may first observe, that for a melting-furnace we need only provide a covering for the upper hole A, which in this case is made the door of the furnace. As this hole is immediately over the grate, it is very convenient for introducing and examining from time to time the substances that are to be acted upon. The cover for the door may be a flat and square tyle or brick. Dr Black usually employs a sort of lid made of plate-iron, with a rim that contains a quantity of luting. The degree of heat will be greater in proportion as we heighten the vent B, and to the number of holes we open in the damping-plate E: by this means the furnace may be employed in most operations in the way of assaying; and though it does not admit of the introduction of a muffle, yet if a small piece of brick is placed upon its one end in the middle of the grate, and if large pieces of fuel are employed, so that the air may have free passage through it, metals may be assayed in this furnace without coming in contact with the fuel. It may therefore be employed in those operations for which a muffle is used; and in this way lead and sundry other metals may be brought to their proper calces.

"When we wish to employ this furnace for those distillations requiring an intense heat, the earthen retort is to be suspended by means of an iron ring, having three branches standing up from it, fig. 9. This ring hangs down from the hole A about one half foot; so that the bottom of the retort rests upon the ring, and is immediately hung over the fuel. The opening between the mouth of the furnace A is filled up with broken crucibles or potsherds, and these are covered over with ashes, which transmit the heat very slowly. This furnace, then, answers for distillations performed with the naked fire. Dr Black has also had some of them provided with a hole in the side from which the neck of the retort issued; and in this way he has distilled the phlogstons of urine, which requires a very strong heat.

“For distillations with retorts, performed in the sand-bath, there is an iron-pot (fig. 10.) fitted for the opening of the furnace A, and this is employed as a sand-pot. In these distillations the vent B becomes the door of the furnace, and it is more easily kept tight than when on the side. When it thus serves for the door, it may be covered with a lid of charcoal and clay.

“This furnace answers very well too for the common still; part of which may be made to enter the opening A; and hang over the fire. In this case, likewise, the vent B is the door of the furnace, by which fresh fuel is to be added: but in ordinary distillations it is never necessary to add fresh fuel; and even in the distillation of mercury, phosphours of urine, and indeed during any process whatever, the furnace generally contains sufficient to finish the operation; so effectually is the heat preserved from dissipation, and the consumption of the fuel is so very slow.

“On the subject of furnaces, we cannot pass over a very excellent one contrived by Dr Price. Though it is perhaps not necessary in the less operose processes in pharmacy; yet we think an explanation of it may be entertaining and useful to many of our readers. The plate of this instrument is taken from an excellent drawing in the possession of our ingenious friend Dr Schwediauer.

EXPLANATION of PLATE II.

“THIS furnace consists of four separate pieces: the body, or largest cylinder, divides in two at the part marked M. The outermost or largest furnace is made of the composition usually employed in England for making the blue crucibles, but with a larger proportion of clay. It is strongly braced with iron, as expressed in the drawing, with screws to tighten the circular-braces, which press on and secure the vertical bars. These bars are terminated at each end by a clamp, which could not very well be expressed in the draught. The front of the furnace is also secured in the part most liable to suffer by the expansion in heating with an iron plate.

“In the lower division is placed a tripod with a circular ring, which supports a grate which may occasionally be changed. The tripod by means of pieces of brick placed under the legs, may be raised according to the intended depth of the fire.

“In the larger furnace, as thus described, may be placed a still, sand-pot, water-bath evaporating vessel, and the like. The fire is to be fed by the aperture B, and the smoke passes off by the flue C, whose dimensions are shown by the dotted lines. The fire is easily regulated, by taking partly or entirely out the doors of the air draughts D and F.

“A muffle may be placed and worked at B, this aperture being made of a proper shape for that purpose, the fuel being put in at top. The muffle being removed, a retort may be placed so as to have its neck passed through the same aperture; and if it be an earthen or coated glass one, may be worked in the naked fire, or with what is called a fire of suppression.

“This larger furnace may be also used as a wind-furnace, or melting-furnace; but is rather larger than common experiments require: it will, however, give a very strong heat when employed for that purpose.

“The

PLATE II

Fig. 1
Fig. 2
Fig. 3
Fig. 4

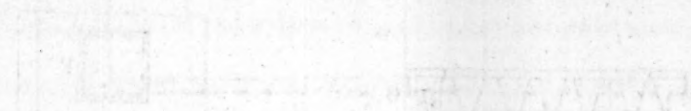
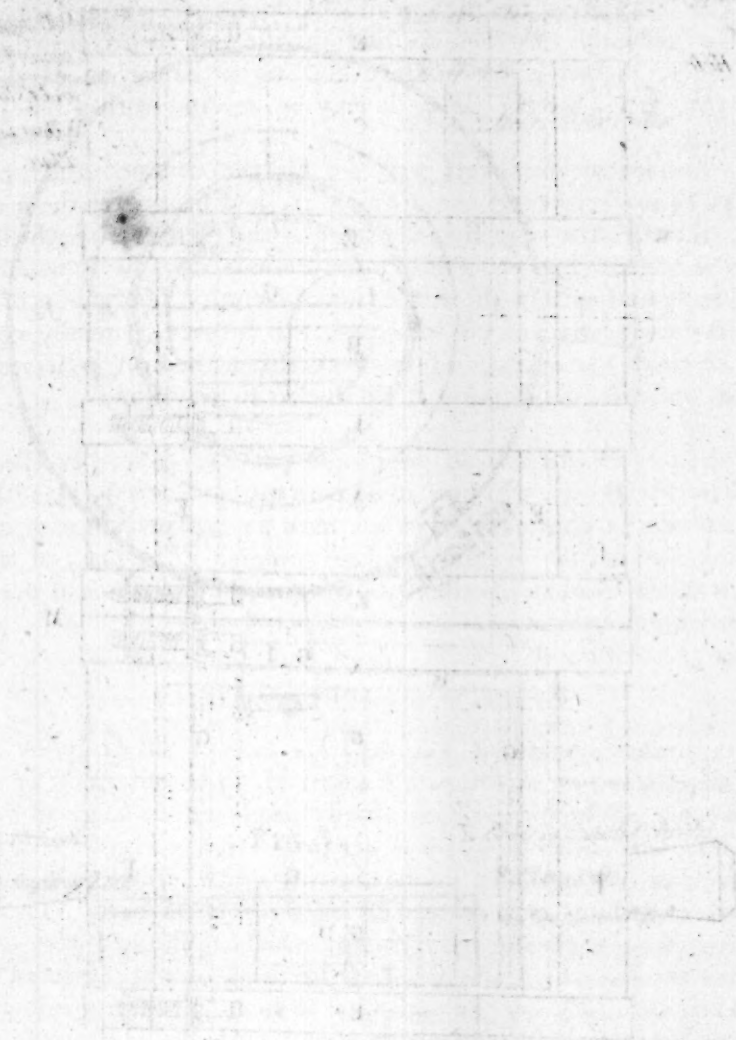
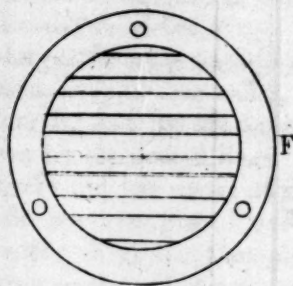
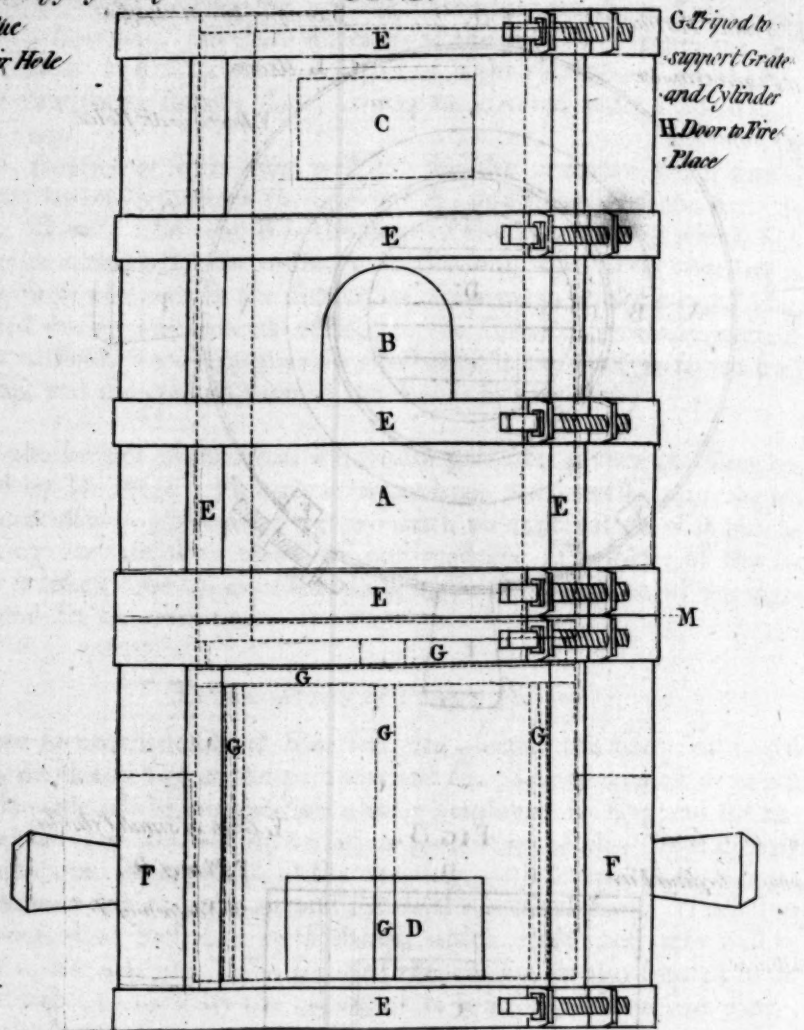


PLATE II. N^o 1.

FIG. 1.

A Body of Furnace
B. Opening for feeding Fire
C. Flue
D. Air Hole

E. Braces wth Screws
F. Doors to Air Holes



tripod Support



FIG. 2.

D. Grate of large Cylinder

E. Braces

F. Doors to Air Holes

Thick^{ts} of outw.^d Furnace
of y^e larger Cylinder
of y^e small D.^o

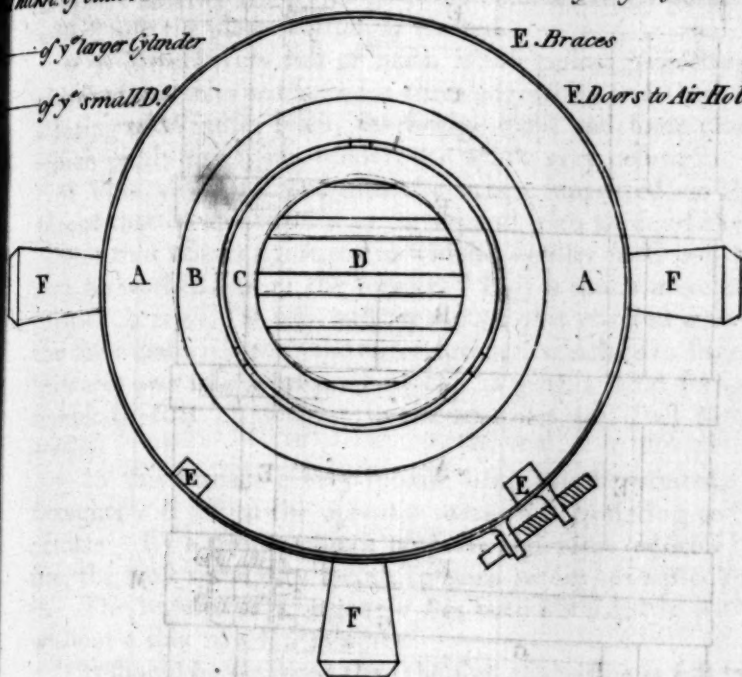


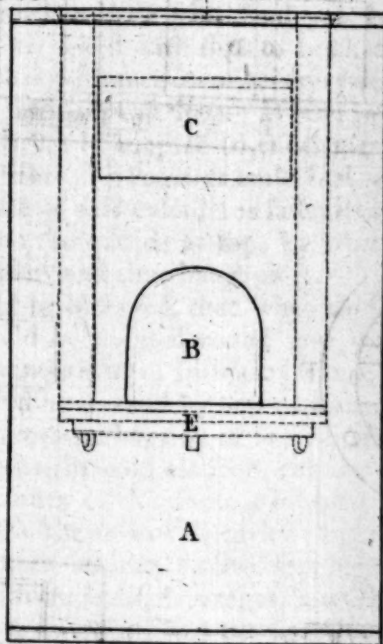
FIG. 3.

E. Grate of small Cylinder

F. Plan of D.^o

G. Section of D.^o

Body of the Cylinder
Opening for feeding Fire
Flue
Iron Braces



D. Lixary Sculp.

Fig. 1.

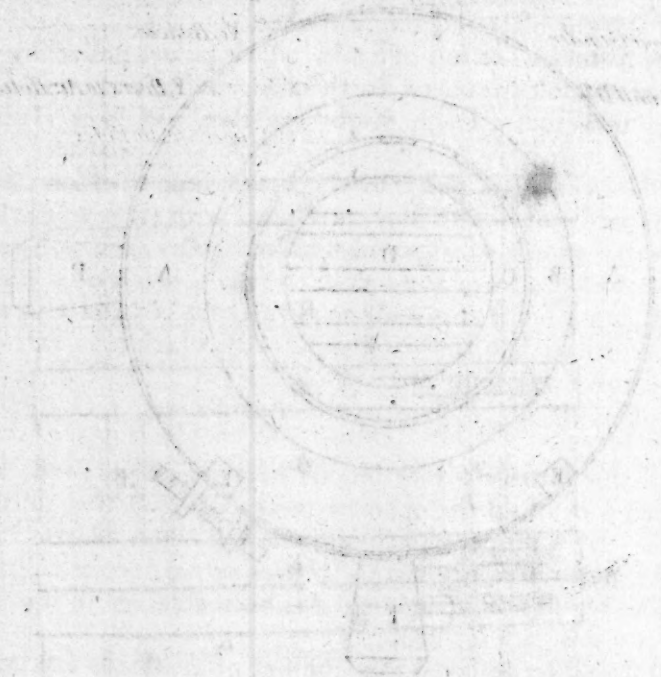
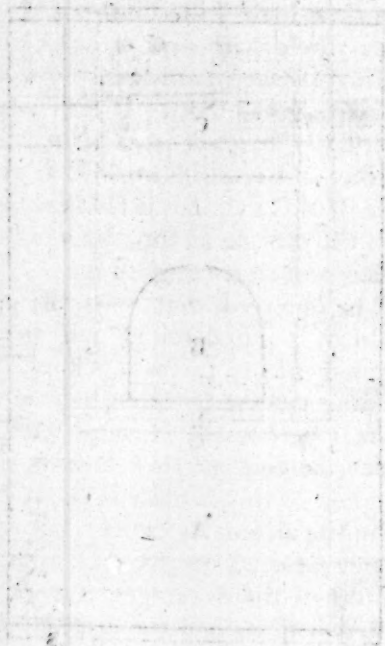


Fig. 2.



"The cylinder marked A, fig. 3. is composed of a thick iron plate properly fastened to two rings of iron connected by perpendicular bars, to which also the plate is strongly riveted.

"It is stuck very full of nails, whose points projecting inwardly hold pieces of crucibles put between them edgewise; and these are covered with a luting of Windsor loam, Sturbridge clay, and some glass-grinders sand, which partly vitrifying, renders the whole very compact.

"This cylinder is put into the other, supported on the grate, and so placed that its apertures may correspond with those of the larger.

"It thus affords a furnace in which a smaller sand-pot, retort, or muffle may be worked, as in the former. It is a much more convenient wind-furnace, being fed at top, and the mouth of it covered with a kind of tile of the same materials with the outer furnace, which is to slide backwards and forwards over it. This method of charging a wind-furnace is much preferable to that of putting in the crucibles and fuel through a door laterally.

"In this furnace a very intense heat may be excited, which the draughts will afford the operator means of regulating to the greatest exactness. By a proper choice of fuel, and some address in managing the fire, the most refractory metals (platina *perhaps* excepted) may be fused in it. The regulus of manganese *has* been obtained in it; and steel melts without a flux in a few minutes.

"It should be observed that the size of the flue is full large, and therefore it may be occasionally closed, partly by pieces of brick of different sizes according to the intended purpose.

"The smaller cylinder, marked C in the plan (fig. 2.), is composed as that just described, but without the aperture for the muffle, though it would not be amiss to have a similar but smaller aperture in this also. It would thus work a little still, sand-pot, bath, &c. but its flue should be considerably narrowed with slips of brick or tiles.

"As a melting-furnace it answers very well for any heat not much greater than that of melting cast iron. It can with care be made to fuse steel. It seems particularly adapted to experiments on small quantities of metal, glass, or the like, as it requires little fuel, and yet gives a sufficient heat.

"The grate of this cylinder is fastened to it, and it rests on three small projections on the outside at top, by which it catches on the ring of the second cylinder, and thus hangs in it.

"It should be observed, that when these cylinders are used, the upper juncture should be pointed round and well closed with fire-lute; and it would be advantageous to sprinkle in some charcoal-dust, which will tend, both by excluding air and by other means, to prevent the scorification of the iron, and may perhaps be of some little use in retaining the heat, or at least will hinder the cold air from coming up and chilling the sides.

"The chimney of this furnace is about eight feet high, and nearly six inches square in the area of its cavity; but, if circumstances had permitted, should have been at least twelve feet high, and much thicker than it is. However, with these disadvantages, it works very well; but would probably give a much fiercer heat, had the situation of it suffered the chimney to be more lofty and massive.

"The construction of this furnace requires a lateral flue. This should be

strongly braced with iron in the part near the furnace; for otherwise it will infallibly fall to pieces after the furnace has been used for a few times.

“Let it be remarked, that opening all the air-draughts and unstoppering the flue, does *not* produce the greatest heat, for reasons which those who have studied the principles of the excitation of fire can readily assign, but which cannot be readily explained to others. Their size is, however, *proper* on other accounts.

“It should be further noticed, that if this kind of furnace is made on a smaller scale, it will require an enlargement of the flue and door to more than the proportional size; and that when made very small, the third cylinder may of course be omitted: but the bracing strongly, and luting, are indispensably requisite in furnaces of every dimension.”

BATHS.

WHERE a strong degree of heat is requisite, as in the fusion of metals, &c. the vessel containing the subject-matter is placed among the burning fuel, or immediately over it: this is called *operating in a naked fire*. Where a smaller heat is sufficient, and the vessel employed is either of glass, or of the more tender kinds of earthen ware, the sand-bath or water-bath is used to defend the vessel from the immediate action of the fire, and to render the heat less fluctuating.

Both these baths have their particular advantages and inconveniences. In water, the heat is equal through every part of the fluid; whereas in sand, it varies in different parts of one perpendicular line, decreasing from the bottom to the top. Water cannot be made to receive, or to transmit to vessels immersed in it, above a certain degree of heat, viz. that which is sufficient to make it boil; and hence it secures effectually against any danger of an excess of heat in those operations wherein the product would be injured by a heat greater than that of boiling water: but this advantage renders it useless for processes which require a greater heat, and for which sand or other like solid intermedia are necessarily employed. There is this convenience also in the sand-bath, that the heat may be readily diminished or increased about any particular vessel, by raising it higher out of the sand or sinking it deeper; that different subjects may be exposed to different degrees of heat from one fire; and that it keeps the vessels steady. The sand made choice of should be a large coarse-grained kind, separated from the finer parts by washing, and from little stones by the sieve.

COATING OF GLASSES, LUTES,

SOME processes require to be performed with glass-vessels in a naked fire. For these purposes, vessels made of the thinnest glass should be chosen; for these bear the fire, without cracking, much better than those which are thicker and in appearance stronger.

All glasses, or other vessels that are apt to crack in the fire, must be cautiously nealed, that is, heated by slow degrees: and when the process is finished, they should be as slowly cooled, unless where the vessel is to be broken to get out the preparation, as in some sublimations: in this case it is more advisable to expose the hot glass suddenly to the cold air, which will soon occasion it to crack, than to endanger throwing down the sublimed matter among the feces by a blow.

As a defence from the violence of the fire, and to prevent the contact of cold air on supplying fresh fuel, &c. the glass is to be coated over, to the thickness of about half a crown, with Windsor loam, softened with water into a proper consistence, and beaten up with some horse-dung, or with the other clayey compositions above mentioned.

These compositions serve also as a lute, for securing the junctures of the vessels in the distillation of the volatile salts and spirits of animals: for the distillation of acid spirits, the matter may be moistened with a solution of fixed alkaline salt instead of water. For most other purposes, a piece of wet bladder, or a paste of flour and water, or of linseed meal (that is, the cake left after the expression of oil of linseed), are sufficient lutes.

" Sometimes clay and chalk are mixed up into a paste, and spread upon slips of paper; and sometimes gum arabic is used instead of the clay, and mixed up in the same manner.

" Wet bladders contract so strongly by drying, that they not unfrequently break the vessels: And the fat lute of Mr Macquer, which is a composition of clay and chalk with oil, is too close for most operations. Where very elastic steams are to be condensed, we are often obliged, even when the common lutes are employed, to leave or make an opening which may be occasionally stopped by a plug: By this means we give passage to a part of these vapours, which prevents the bursting of the vessels, and facilitates the condensation of the rest. If we wish to collect incondensable vapours, we receive them into a jar inverted under a basin of water or quicksilver, as directed in our Analysis of Vegetables by fire.

" Besides these, there are also required some other kinds of lutes for joining vessels together in operations requiring a strong heat, and for lining furnaces. Four parts of sand and one of clay answers best for luting: but for lining the inside of furnaces, six or seven parts of sand to one of clay is necessary, in order to prevent the contraction and consequent cracking of the clay, which it most readily does when freed of sand. Besides this lute immediately next to the fire, three parts, by weight, of charcoal, to one of common clay, are first mixed in a dry powder, and as much water is to be added as will make them form into balls of the consistence of snow: these balls are beat very firm and compact, by means of a hammer, on the inside of the furnace, to the thickness of about one inch and a half: the other lute is spread over this to about the thickness of half an inch; and this too is beat solid by means of a hammer, and allowed to dry slowly, that all cracks and fissures may be prevented. After the body of the furnace is thus lined, the vent is applied and lined in the same manner; and the whole being dried, which requires a long time, a fire is kindled in the furnace, which is gradually heated a day or two, and then is raised to the greatest intensity: By these means the whole luting acquires a hardness equal to that of free-stone. These are the lutes recommended and used by Dr Black; and, except for some operations in metallurgy, the Doctor seems to have been the first who thought of employing charcoal as an ingredient for the lining of furnaces."

The few simple lutes, here described, will be found to answer all the purposes of the more operose compositions recommended for these intentions by the chemical writers.

VESSELS.

In this place, I shall only give the operator a few general cautions with regard to the *matter* of the vessels designed for containing the subject; "and refer their description to the plates, and to the account of the operations in which they are employed.

"Metalline vessels possess the advantage of being able to bear sudden alterations of heat and cold, and of being very strong, so as to be capable of confining elastic steams;" but, except those made of gold or silver, they are readily corroded by acids, even by the milder ones of the vegetable kingdom. Copper ones are corroded also by alkaline liquors, and by some neutral ones, as solutions of sal ammoniac. It is observable, that vegetable acids do not act upon this metal by boiling, so much as by standing in the cold; for even lemon-juice may be boiled in a clean copper vessel, without receiving from it any taste or ill quality; whereas, in the cold, it soon dissolves so much as to contract a pernicious taint. The tin, with which copper-vessels are usually lined, gives likewise a sensible impregnation to acid juices; and this impregnation also is probably not innocent, more especially as a quantity of lead is commonly mixed with the tin. "From the want of transparency in these vessels, we are also deprived of the advantage of seeing the different changes during the operation.

"The earthen vessels possess none of the desirable qualities for chemical operations, except that of sustaining very violent degrees of heat, without being melted or otherwise changed. These vessels are less liable to external cracks from sudden applications of heat and cold, when they are made with a certain proportion of sand, than with pure clay. Black-lead, too, mixed with the clay, makes the vessels sustain violent degrees and sudden alterations of heat surprisingly well: crude clay, reduced to a kind of sand by violent heat, and then mixed with raw clay, is also found to furnish vessels excellently fitted for those operations where sand might be corroded: but of all others, the most perfect kind of earthen ware is porcelain, composed of the finest clay mixed with a stony matter capable of melting in a violent heat: This however is too costly an article for general use. Reaumur discovered a method of imitating porcelain, by melting the coarser kinds of glass with a mixture of sand and clay: this has been found to be nearly of the colour of porcelain, to be much stronger than glass, and to bear the most sudden changes of heat and cold that we have occasion to apply. There has not hitherto been any manufacture of this ware; till then it will not probably come into general use."

The common earthen vessels are of a loose porous texture; and hence are apt to imbibe a considerable quantity of certain liquids, particularly of those of the saline kind; which soon discover their penetrating the vessel, by shooting into saline efflorescences on the outside. Those which are *glazed* have their glazing corroded by acids; by vinegar, and the acid juices of fruits, as well as by the stronger acids of the mineral kingdom. And as this glazing consists chiefly of vitrified lead, the impregnation which it communicates to these liquors is of a very dangerous kind. If vinegar be boiled for some time in a glazed earthen vessel, it will yield, on being inspissated, a pure saccharum saturni, that is, a salt composed of lead and the acetous acid; of which hereafter.

The vessels called, from their hardness and compactness, *stone ware*, are in

1921. 11. 10. 1921.



PLATE. III. N° 1.

FIG.



1.

FIG.

2.

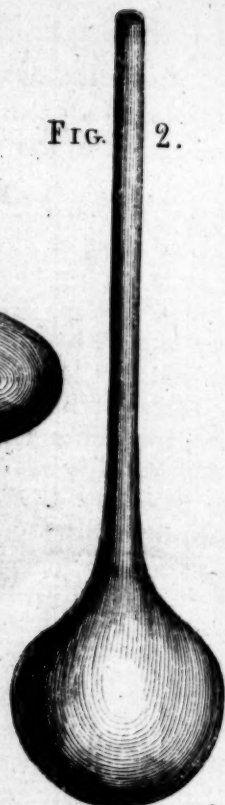


FIG. 3.



FIG. 4.

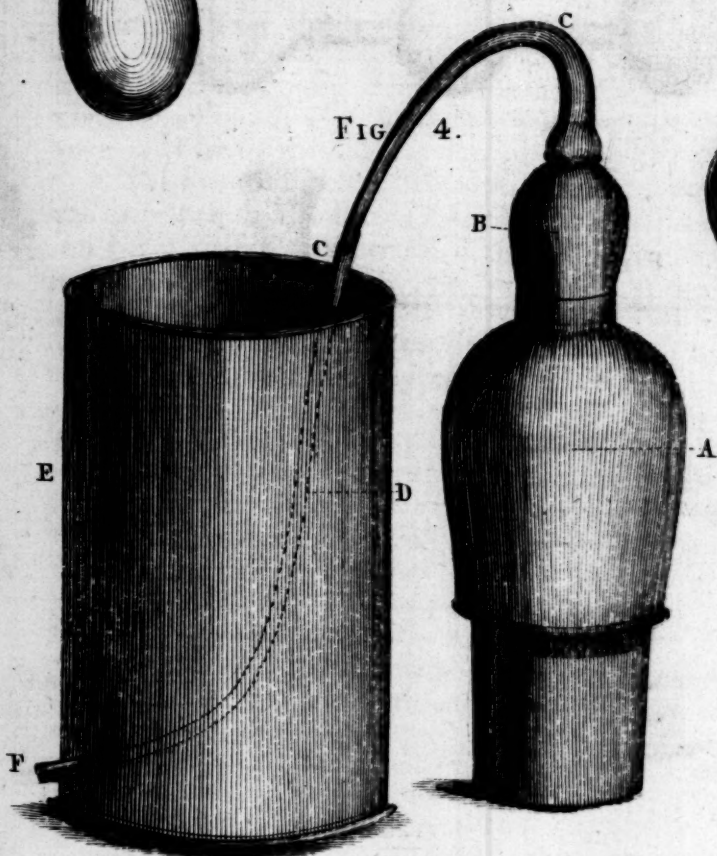


FIG.

5.



D. LIZARS SCULPT.

PLATE. III. N^o 2.



FIG. 7.



FIG. 8.

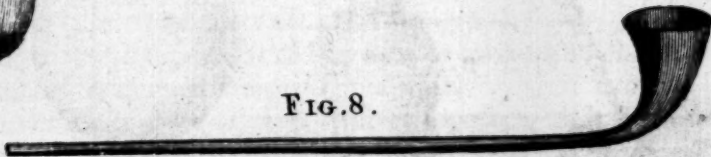
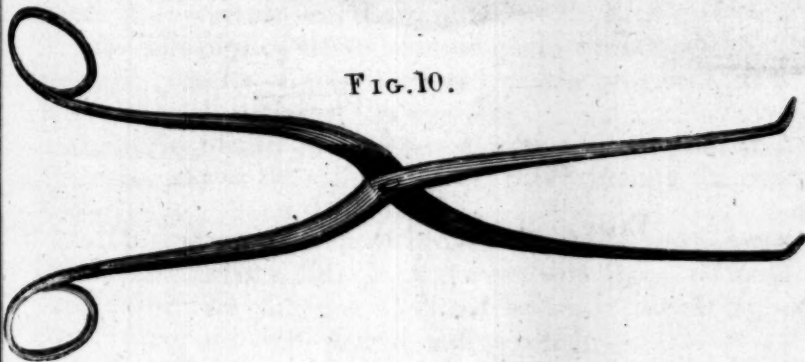


FIG. 9.



FIG. 10.



Blissard Sculp.

27/30



in good measure free from the inconveniences of the coarser earthen ones. Their glazing being a part of the clay itself, superficially vitrified by means of the fumes of common salt, appears to be proof against acids.

Glass-vessels suffer no corrosion, and give no taint, in any of the pharmaceutical operations. "When, therefore, they are made of a proper thinness, when they are well annealed, and when blown into a spherical form so that the heat may be equally applied, they are preferable to all others, where great and sudden changes of heat and cold are not to take place, and where strength is not required: What is called the *flint-glass*, which contains a quantity of lead in its composition, is the best for chemical purposes. Having made these general remarks, we next come to describe the particular instruments used in pharmacy: but as the nature and uses of each will be better understood after reading the following chapter, and the processes in which they are employed, we shall here only give a short explanation of the figures of these instruments; and to which the reader may occasionally recur in going over the sequel of the work.

EXPLANATION of PLATE III.

"Fig. 1. An evaporating pan, being such a section of a globe of glass as is best fitted for exposing a large surface.

"Fig. 2. The chemical phial or matrass, furnished with a long neck for allowing the vapours raised by heat or mixture to circulate and be condensed, whereby their escape is prevented.

"Fig. 3. A retort and receiver together, to show their connection during distillation or sublimation. The receiver is of a conical figure; whereby the steams have more room to circulate and condense. Dr Black has found this form more convenient, when we wish to get out sublimed matter.

"In the last figure was represented an example of the *distillatio per latus*, or the distillation by the retort and receiver; and it is used in all cases where nice operations are required, or where metallic vessels would be corroded by the contained matter. The *distillatio per ascensum* is performed by,

"Fig. 4. A copper still.

"A. The body of the still, containing the matter.

"B. The head of the still into which the vapour immediately arises; this is made to fit very closely to the body, so as to require little or no luting.

"C. A pipe issuing from the middle of the top of the head, and descending to D. is received into the pipe D.

"D. The pipe or worm descending into a large vessel E of copper, containing a quantity of cold water to keep the pipe cool, and thereby facilitate the condensation of the vapours.

"F. The further extremity of this pipe, coming out at an opening, in the under part of the vessel E; from this extremity the condensed matter distills.

"This instrument is on the construction used and recommended by Dr Black, and varies a little from the common form. The Doctor finds it unnecessary that the pipe D should be made serpentine, which renders the cleaning of it very difficult and uncertain.

"Fig. 5. A separatory, for separating oil from water.

"This

" This instrument is provided with two tubes, A, B, projecting from near its neck ; and it is managed thus : If the oil to be separated is specifically lighter than water, the vessel is gently inclined to one side, in order to pour out the oil, which from its lightness has ascended into the tube : if, on the contrary, the oil is specifically heavier than water, the vessel, with its mouth shut, is to be inverted, that the oil at its bottom may be brought to sink into one of the tubes ; from which it is to be poured till the water begins to come off along with it, when the mouth of the tube is to be instantly shut by the top of a finger. It is obvious, that to manage this instrument properly, requires considerable address and dexterity.

" Fig. 6. An oblong glass vessel, the under part of which is kept hot, when intended to sublime solid matters, and the upper part is kept cool, whereby the vapour is condensed in the form of a cake at the top. The mouth of the vessel is to be stopp'd by a cotton stopple. This method is not so well fitted for large operations as the retort and receiver.

" Fig. 7. An adapter, which is a receiver that has a pipe issuing from its farther extremity, and which is received into another receiver or adapter ; we may increase or diminish the number of receivers at pleasure. It may be useful for the condensation of very elastic vapours, as those of the caustic volatile alkali, vitriolic ether, &c. The receivers in this instrument are of the usual form, and may show wherein that recommended by Dr Black differs.

" Fig. 8. A retort-funnel for pouring in liquors, so as to prevent touching the neck of the retort ; and it is necessary that in drawing out the funnel we should keep it applied to the upper part of the retort, whereby the drop hangs from the under edge of the funnel, and therefore cannot touch the inside of the retort.

" Fig. 9. A crucible, which is angled at the top for the conveniency of pouring out the contained matter. It is narrow below for receiving small quantities, which in a larger compass might be less easily brought out. The black-lead and clay crucibles are often acted on by saline matters, and sometimes destroyed by the inflammable matter of the black-lead : they, however, answer much better for fusing metals than those of clay and sand. These last answer best for saline substances ; but being more liable to break than the other, they may be made securer by inclosing the crucible containing the matter within another crucible, and filling up the interstices with sand.

" The crucible in this figure stands upon a pedestal, which is a piece of clay or brick betwixt the crucible and the grate, to prevent the cold air striking the bottom whilst the top is hot ; in which case the crucible generally breaks to pieces. To prevent the fuel from falling in, we use covers made of clay, or we invert another crucible upon that containing the matter, and secure the joining by a proper lute.

" Fig. 10. A pair of crucible tongs for putting in or taking out the matter to be wrought on."

WEIGHTS.

Two different kinds of weights are made use of in this country ; one in the merchandise of gold and silver ; the other for almost all goods besides. The first we call Troy, the latter Averdupois weight.

The

The goldsmiths divide the Troy pound into twelve ounces; the ounce into twenty pennyweights; and the pennyweight into twenty-four grains. The Averdupois pound is divided into sixteen ounces; and the ounce into sixteen parts, called drams.

The pound of the London and Edinburgh dispensatories (which is the only one made use of in this, Dr Lewis's, work) is that of the goldsmiths, divided in the following manner:

The pound	}	contains	{	twelve ounces.
The ounce				eight drams.
The dram				three scruples.
The scruple				twenty grains.
The grain is equal to the				goldsmiths grain.

The medical or Troy pound is less than the Averdupois, but the ounce and the dram greater. The Troy pound contains 5670 grains; the Averdupois 7000 grains. The Troy ounce contains 480 grains; the Averdupois only 437½. The Troy dram 60; the Averdupois dram somewhat more than 27. Eleven drams Averdupois are equal to five drams Troy; twelve ounces Averdupois to nearly eleven ounces Troy; and nineteen pounds Averdupois to somewhat more than twenty-three pounds Troy.

These differences in our weights have occasioned great confusion in the practice of pharmacy. As the druggists and grocers sell by the Averdupois weight, the apothecaries have not in general kept any weights adjusted to the Troy pound greater than two drams, using for all above Averdupois. By this means it is apparent, that in all compositions, where the ingredients are prescribed, some by pounds and others by ounces, they are taken in a wrong proportion to each other; and the same happens when any are directed in lesser denominations than the ounce, as these subdivisions, used by the apothecaries, are made to a different ounce. The mercurial plaster of the late Pharmacopœia, and the mercurial cerate of the present, if compounded by the Averdupois weight, contain about one-sixth less quicksilver than if made, as they ought to be, by the Troy. This error prevailed so far as to be received in some former editions of the London Pharmacopœia itself; but is now happily removed.

MEASURES.

The measures employed with us in pharmacy are the common wine measures.

A gallon	}	contains	eight pints (<i>librae.</i>)
The pint			sixteen ounces.
The ounce			eight drams.

By a spoonful is understood in the London dispensatory the measure of half an ounce; in the Edinburgh, it was half an ounce weight in syrups, and three drams in distilled waters.

Though the pint is called by Latin writers *libra* or pound, there is not any known liquor of which a pint-measure answers to that weight. A pint of the highest rectified spirit of wine exceeds a pound by above half an ounce; a pint of water exceeds it by upwards of three ounces; and a pint of oil of vitriol weighs more than two pounds and a quarter.

“ The

"The Edinburgh College, sensible of the many errors from the promiscuous use of weights and measures, and of different kinds of these, have in the last edition of their Pharmacopœia entirely rejected measures, and employ the Troy weight in directing the quantity either of solid or fluid substances. They have, however, taken all possible care that the proportion of the simples and strength of the compound, should neither be increased nor diminished by this alteration. This change in the Edinburgh Pharmacopœia must be very particularly adverted to."

A table of the weights of certain measures of different fluids may on many occasions be useful, both for assisting the operator in regulating their proportions in certain cases, and for showing the comparative gravities of the fluids themselves. I have therefore drawn up such a table for a pint, an ounce, and a dram measure, of those liquids, whose gravity has been determined by experiments that can be relied on. The wine gallon contains 231 cubic inches; whence the pint contains $28\frac{7}{8}$, the ounce $1\frac{103}{128}$, and the dram $1\frac{131}{512}$ of a cubic inch.

	Pint weights			Ounce measure weights	Dram measure weights
	ounces	drams	grains	grains	grains
INFLAMMABLE SPIRITS.					
Æthereal spirit of wine	11	1	36	336	42
Highly-rectified spirit of wine	12	5	20	380	$47\frac{1}{2}$
Common-rectified spirit of wine	13	2	40	400	50
Proof spirit	14	1	36	426	53
Dulcified spirit of salt	14	4	48	438	55
Dulcified spirit of nitre	15	2	40	460	$57\frac{1}{2}$
WINES.					
Burgundy	14	1	36	426	53
Red Port	15	1	36	456	57
Canary	15	6	40	475	$59\frac{1}{2}$
EXPRESSED OILS.					
Oil olive	14	0	0	420	$52\frac{1}{2}$
Linseed oil	14	2	8	428	$53\frac{1}{2}$
ESSENTIAL OILS.					
Oil of turpentine	12	1	4	364	$45\frac{1}{2}$
of orange-peel				408	51
of juniper-berries				419	52
of rosemary				430	54
of origanum				432	54
of caraway-seeds				432	54
of nutmegs				436	$54\frac{1}{2}$
of favin				443	$55\frac{1}{2}$
of hyssop				443	$55\frac{1}{2}$
of cummin-seed				448	56
of mint				448	56
of pennyroyal				450	$56\frac{1}{2}$

Oil

ESSENTIAL OILS *continued.*

	Pint weighs	Ounce measure weighs	Dram measure weighs
	ounces drams grains	grains	grains
Oil of dill-seed		457	57
of fennel-seed		458	57
of cloves		476	59½
of cinnamon		576	49½
of saffrafas		503	63

ALKALINE LIQUORS.

Lixivium saponarium, <i>Pharm. Lond.</i>	16 0 0	480	60
Spirit of fal ammoniac	17 1 10	515	64½
Strong soapboilers ley	17 6 24	534	67
Lixivium tartari	24 0 0	720	90

ACID LIQUORS.

Wine-vinegar	15 3 44	464	58
Beer-vinegar	15 6 56	476	59½
Glauber's spirit of salt	17 4 0	525	65½
Glauber's spirit of nitre	20 2 40	610	76
Strong oil of vitriol	28 5 20	860	107½

ANIMAL FLUIDS.

Urine	15 5 20	470	59
Cows milk	15 6 40	475	59½
Asses milk	16 0 0	480	60
Blood	16 1 4	484	60½

WATERS.

Distilled water	15 1 50	456	57
Rain-water	15 2 40	460	57½
Spring-water	15 3 12	462	58
Sea-water	15 5 20	470	59

QUICKSILVER

	214 5 20	6440	805
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CHAPTER III.

Of the Pharmaceutival Operations.

S E C T. I.

SOLUTION.

SOLUTION is an intimate commixture of solid bodies with fluids into one seemingly homogeneous liquor. The dissolving fluid is called a *menstruum* or *solvent*; and the body dissolved is called the *solvend*.

“Objections have been made, and perhaps with propriety, to these terms; as it is supposed that the two bodies uniting in solution act reciprocally on each other: there is, however, no danger from the words themselves, if we do not derive them from a mistaken theory. Solution cannot take place, except one of the bodies, at least, be in a fluid state; and this fluidity is effected either by water or fire: hence solution is said to be performed in the *humid*, or in the *dry way*. Thus, for instance, if any quantity of brimstone is dissolved in a solution of fixed alkali, the brimstone is said to be dissolved in the *humid way*; but if the brimstone is dissolved by melting it in a pan with the dry alkali, the solution is said to be done in the *dry way*. The hepar sulphuris is the same in both. Another kind of solution resembling that by the dry way, is, however, to be carefully distinguished from it: If, for example, a piece of Glauber's salt is put into a pan over the fire, the salt very soon assumes a liquid state; but on continuing the heat, it loses its fluidity, and becomes a white powder: this powder is nothing but the salt freed from its water, and it is found to be very refractory. This liquidity depended on the water of crystallisation, being enabled by the heat to keep the salt in solution, and the salt ceased to be fluid as soon as its crystallising water was evaporated. This kind of solution, then, differs not from the first, or humid way.

“If one of the two bodies to be united is transparent, the solution, if complete, is a transparent compound: this is the case in solutions of alkalis and calcareous earths in acids. But if the solution is opaque and milky, as is the case with soap and water, it is then considered as incomplete.”

The principal menstrua made use of in pharmacy are, *water, vinous spirits, oils, acid and alkaline liquors*.

Water is the menstruum of all salts, of vegetable gums, and of animal-gellies. Of salts, it dissolves only a determinate quantity, though of one kind of salt more than another; and being thus *saturated*, leaves any additional quantity of the same salt untouched.

Experiments have been made for determining the quantities of water which different salts require for the dissolution. Mr Eller has given a large

large set in the Memoirs of the Royal Academy of Sciences of Berlin for the year 1750, from which the following table is extracted.

Eight ounces by weight of distilled water dissolved,

	oz.	dr.	gr.
Of Refined sugar,	24	0	0
Green vitriol	9	4	0
Blue vitriol	9	0	0
White vitriol	4	4	0
Epſom ſalt	4	0	0
Purified nitre	4	0	0
Soluble tartar	4	0	0
Common ſalt	3	4	0
Sal gemmæ	3	4	0
Sal catharticus Glauberi	3	4	0
Seignette's ſalt	3	0	0
Alum	2	4	0
Sal ammoniac	2	4	0
Vitriolated tartar	1	4	0
Salt of hartſhorn	1	4	0
Sugar of lead	1	2	0
Cream of tartar	1	0	0
Borax	0	4	20

Though great care appears to have been taken in making these experiments, it is not to be expected that the proportions of the several salts, soluble in a certain quantity of water, will always be found exactly the same with those above set down. Salts differ in their solubility according to the degree of their purity, perfection, and dryness: the vitriols, and the artificial compound salts in general, differ remarkably in this respect, according as they are more or less impregnated with the acid ingredient. Thus vitriolated tartar, perfectly neutralized, is extremely difficult of solution: the matter which remains in making Glauber's spirit of nitre (see Part III. Chap. viii. Sect. 6.) is no other than a vitriolated tartar; and it dissolves so difficultly, that the operator is obliged to break the retort in order to get it out; but on adding more of the vitriolic acid, it dissolves with ease. Hence many have been tempted to use an over-proportion of acid in this preparation; and we frequently find in the shops, under the name of vitriolated tartar, this acid soluble salt. The degree of heat occasions also a notable difference in the quantity of salt taken up: in very cold weather, eight ounces of water will dissolve only about one ounce of nitre; whereas in warm weather, the same quantity will take up three ounces or more. To these circumstances are probably owing, in great part, the remarkable differences in the proportional solubilities of salts, as determined by different authors. It is observable that common salt is less affected in its solubility by a variation of heat than any other; water in a temperate state dissolving nearly as much of it as very hot water: and accordingly this is the salt in which the different experiments agree the best. In the experiments of Hoffmann, Neumann, and Petit, the proportion of this salt, on a reduction of the numbers, comes out exactly the same, viz. three ounces of the salt to eight of water; Dr Brownrigg makes

makes the quantity of salt a little more; Dr Grew, a dram and a scruple more; and Eller, as appears in the above table, four drams more: so that in the trials of six different persons, made probably in different circumstances, the greatest difference is only one-sixth of the whole quantity of salt; whereas in some other salts there are differences of twice or thrice the quantity of the salt. In the experiments from which the table is drawn, the water was of the temperature of between 40 and 42 degrees of Fahrenheit's thermometer, or above freezing by about one-seventh of the interval between freezing and the human heat.

Some salts omitted by Eller are here subjoined: the first is taken from Dr Grew, and the other four from Neumann.

Eight ounces of water dissolved

	oz.	dr.	gr.
Of fixed alkaline salt	above 8	0	0
Sal diureticus	8	0	0
Sugar-candy, both brown and white	9	0	0
Sugar of milk	0	0	0
Essential salt of ferrel	0	1	20

Though water takes up only a certain quantity of one kind of salt, yet when saturated with one, it will still dissolve some portion of another; and when it can bear no more of either of these, it will still take up a third, without letting go any of the former. The principal experiments of this kind that have been made relative to pharmaceutic subjects, are exhibited in the following table; of which the two first articles are from Grew, and the others from Eller.

Water, 32 parts by weight,			
Fully saturated with	Nitre	dissolved afterwards	Sal ammoniac 10
	Common salt		Nitre 10
	Nitre		Fixed alkali 7
	Common salt		Nitre, near 2
	Volatile alkali		Nitre 4
	Sal ammoniac		Common salt 2½
	Soluble tartar		Nitre 2
	Vitriolated tartar		Fixed alkali 2
	Glauber's salt		Nitre 1
	Epsom salt		Sugar 6
	Borax		Fixed alkali 2
			Sal ammoniac 2
			Common salt 2
			Fixed alkali 2½
			Sugar 2
			Sugar 1

In regard to the other class of bodies which water is a menstruum for, viz. those of the gummy gelatinous kind, there is no determinate point of saturation: the water unites readily with any proportions of them, forming with different quantities liquors of different consistencies. This fluid takes up likewise, when assisted by trituration, the vegetable gummy resins, as ammoniacum and myrrh; the solutions of which, though imperfect, that is, not transparent, but turbid and of a milky hue, are nevertheless applicable to valuable purposes in medicine. It mingles with vinous spirits, with acid and alkaline liquors, not with oils, but imbibes some of

the more subtile parts of essential oils, so as to become impregnated with their smell and taste.

Rectified spirit of wine is the menstruum of the essential oils, resins, and camphor of vegetables; of the pure distilled oils, and several of the colouring and medicinal parts of animals; of some mineral bituminous substances, as of ambergris; and of soaps, though it does not act upon the expressed oil and fixed alkaline salt, of which soap is composed: whence, if soap contains any superfluous quantity of either the oil or salt, it may by means of this menstruum be excellently purified therefrom. It dissolves, by the assistance of heat, volatile alkaline salts; and more readily the neutral ones, composed either of fixed alkali and the acetous acid, as the sal diureticus, or of the volatile alkali and the nitrous acid, as also the salt of amber, &c. It mingles with water and with acids; not with alkaline lixivia.

OILS dissolve vegetable resins and balsams, wax, animal-fats, mineral bitumens, sulphur, and certain metallic substances, particularly lead. The expressed oils are, for most of these bodies, more powerful menstrua than those obtained by distillation; as the former are more capable of sustaining, without injury, a strong heat, which is in most cases necessary to enable them to act. It is said, that one ounce of sulphur will dissolve in three ounces of expressed oil, particularly that of linseed; but requires six ounces of essential oil, as that of turpentine.

ALL acids dissolve alkaline salts, alkaline earths, and metallic substances. The different acids differ greatly in their action upon these last; one dissolving only some particular metals; and another, others.

The *vegetable* acids dissolve a considerable quantity of zinc, iron, copper, lead, and tin; and extract so much from the metallic part of antimony, as to become powerfully emetic: They dissolve lead more readily, if the metal is previously calcined by fire, than in its metallic state.

The *marine* acid dissolves zinc, iron, and copper; and though it scarce acts on any other metallic substance in the common way of making solutions, it may nevertheless be artfully combined with them all except gold. The corrosive sublimate, and antimonial caustic of the shops, are combinations of it with mercury and the metallic part of antimony, effected by applying the acid, in the form of fume, to the subjects, at the same time also strongly heated.

The *nitrous* acid is the common menstruum of all metallic substances, except gold and the metallic part of antimony; of which two, the proper solvent is a mixture of the nitrous and marine acids, called *aqua regia*.

The *vitriolic* acid, diluted with water, easily dissolves zinc and iron. In its concentrated state, and assisted by a boiling heat, it may be made to corrode, or imperfectly dissolve, most of the other metals.

"The *aërial* acid dissolves iron, zinc, and calcareous earth; and those solutions must be conducted without heat."

ALKALINE lixivia dissolve oils, resinous substances, and sulphur. Their power is greatly promoted by the addition of quicklime; instances of which occur in the preparation of soap, and in the common caustic. Thus acua-

ted, they reduce the flesh, bones, and other solid parts of animals, into a gelatinous matter.

“ This increased acrimony in alkaline salts, is owing to the abstraction of their fixed air; that acid having a greater attraction for quicklime than for alkalis.”

Solutions made in water and in spirit of wine possess the virtues of the body dissolved; whilst oils generally sheathe its activity, and acids and alkalis vary its quality. Hence watery and spirituous liquors are the proper menstrua of the native virtues of vegetable and animal matters.

Most of the foregoing solutions are easily effected, by pouring the menstruum on the body to be dissolved, and suffering them to stand together for some time exposed to a suitable warmth. A strong heat is generally requisite to enable oils and alkaline liquors to perform their office; nor will acids act on some metallic bodies without its assistance. The action of watery and spirituous menstrua is likewise expedited by a moderate heat; though the quantity which they afterwards keep dissolved is not, as some suppose, by this means increased: all that heat occasions these to take up, more than they would do in a longer time in the cold, will, when the heat ceases, subside again. This at least is most commonly the case, though there may be some instances of the contrary.

The action of acids on the bodies which they dissolve, is generally accompanied with heat, effervescence, and a copious discharge of fumes. The fumes which arise during the dissolution of some metals in the vitriolic acid, prove inflammable: hence in the preparation of the artificial vitriols of iron and zinc, the operator ought to be careful, especially where the solution is made in a narrow-mouthed vessel, lest by the imprudent approach of a candle the exhaling vapour be set on fire. “ This vapour is the inflammable air of Dr Priestley and other modern chemists.”

There is another species of solution, in which the moisture of the air is the menstruum. Fixed alkaline salts, and those of the neutral kind, composed of alkaline salts and the vegetable acids, or of soluble earths and any acid, except the vitriolic, and some metallic salts, on being exposed for some time to a moist air, gradually attract its humidity, and at length become liquid. Some substances, not dissoluble by the application of water in its grosser form, as the butter of antimony, are easily liquefied by this slow action of the æreal moisture. This process is termed *deliquation*.

S E C T. II.

EXTRACTION.

THE liquors which dissolve certain substances in their pure state, serve likewise to *extract* them from admixtures of other matter. Thus rectified spirit of wine, the menstruum of essential oils and resins, takes up the virtues of the resinous and oily vegetables, as water does those of the mucilaginous and saline; the inactive earthy parts remaining untouched by both. Water extracts likewise from many plants, substances which by themselves it has little effect upon; even essential oils being, as we have formerly observed, rendered soluble in that fluid by the admixture of gummy and saline matter, of which all vegetables participate

in a greater or less degree. Thus many of the aromatic plants, and most of the bitters and astringents, yield their virtues to this menstruum.

Extraction is performed, by *macerating* or *steeping* the subject in its appropriated menstruum in the cold; or *digesting* or *circulating* them in a moderate warmth; or *infusing* the plant in the boiling liquor, and suffering them to stand in a covered vessel till grown cold; or actually *boiling* them together for some time. "If the vegetable matter is itself succulent and watery, it is sometimes only necessary to express the juice, and evaporate it to the proper consistence."

The term *digestion* is sometimes used for maceration; and in this case the process is directed to be performed *without heat*: where this circumstance is not expressed, digestion always implies the use of heat. Circulation differs from digestion only in this; that the steam, into which a part of the liquor is resolved by the heat, is, by means of a proper disposition of the vessels, condensed and conveyed back again upon the subject. Digestion is usually performed in a matrass (or bolt-head), Florence flask, or the like; either of which may be converted into a circulatory vessel, by inverting another into the mouth, and securing the juncture with a piece of wet bladder. A single matrass, if its neck is very long and narrow, will answer the purpose as effectually; the vapour cooling and condensing before it can rise to the top: in a vessel of this kind, even spirit of wine, one of the most volatile liquors we know of, may be boiled without any considerable loss: the use of this instrument is likewise free from an inconvenience, which may in some cases attend the other, of the uppermost vessel being burst or thrown off. As the long-necked matrasses here recommended, are difficultly filled or emptied, and likewise very dear, a long glass pipe may be occasionally luted to the shorter ones.

Heat greatly expedites extraction; but by this means proves as injurious to some substances, by occasioning the menstruum to take up their grosser and more ungrateful parts, as it is necessary for enabling it to extract the virtues of others. Thus guaiacum or logwood impart little to aqueous liquors without a boiling heat; whilst even a small degree of warmth proves greatly prejudicial to the fine bitter of carduus benedictus. This plant, which infused in boiling, or digested in sensibly hot water, gives out a nauseous taste, so offensive to the stomach as to promote vomiting, yields to the cold element a grateful balsamic bitter, the most elegant stomachic of the shops.

As heat promotes the dissolving power of liquids; so cold, on the other hand, diminishes it. Hence tinctures or extractions made by a considerable heat, deposite in cold weather a part of their contents, and thus become proportionably weaker: a circumstance which deserves particular regard.

S E C T. III.

DEPURATION.

THERE are different methods of *depurating* or purifying liquors from their feculencies, according as the liquor itself is more or less tenacious, or the feculent matter of greater or less gravity.

[E 2]

Thin

Thin fluids readily deposite their more ponderous impurities upon standing at rest for some time in a cool place; and may then be *decanted*, or poured off clear, by inclining the vessel.

Glutinous, unctuous, or thick substances, are to be liquefied by a suitable heat; when the grosser feculencies will fall to the bottom; the lighter arising to the surface, to be *despumated* or scummed off.

Where the impurities are neither so ponderous as to subside freely to the bottom, nor so light as to arise readily to the surface, they may be separated in great measure by *colature* through strainers of linen, woollen, or other cloth; and more perfectly by *filtration* through a soft bibulous kind of paper made for this use.

The grey paper which covers pill-boxes as they come from abroad, is one of the best for this purpose; it does not easily break when wetted, or tinge the liquor which passes through it, which the reddish sort called *blossom paper* frequently does. The paper is supported by a funnel or piece of canvas fixed in a frame. When the funnel is used, it is convenient to put some straws or small sticks between the paper and its sides, to prevent the weight of the liquor from pressing the paper so close to it, as not to allow room for this fluid to transude. In some cases a funnel made of wire is put betwixt the paper and the glass funnel. There is also a kind of glass funnel with ridges down its sides made on purpose for this use.

Glutinous and unctuous liquors, which do not easily pass through the pores of a filter or strainer, are *clarified* by beating them up with whites of eggs; which concreting or growing hard when heated, and entangling the impure matter, arise with it to the surface: the mixture is to be gently boiled till the scum begins to break, when the vessel is to be removed from the fire, the crust taken off, and the liquor passed through a flannel bag.

Decantation, colature, and filtration, are applicable to most of the medicated liquors that stand in need of purification. Despumation and clarification very rarely have place; since these, along with the impurities of the liquor, frequently separate its medicinal parts. Thus, if the decoction of poppy heads, for making diacodium, be solicitously scummed or clarified (as some have been accustomed to do), the medicine will lose almost all that the poppies communicated; and instead of a mild opiate, turn out little other than a plain syrup of sugar.

It may be proper to observe that the common sorts of filtering paper are apt to communicate a disagreeable flavour: and hence in filtering fine bitters, or other liquor, whose gratefulness is of primary consequence, the part which passes through first ought to be kept apart for inferior purposes.

S E C T. IV.

CRYSTALLISATION.

WATER, assisted by heat, dissolves a larger proportion of most saline substances than it can retain when grown cold: hence, on the abatement of the heat, a part of the salt separates from the menstruum, and concretes at the sides and bottom of the vessel. The concretions,

tions, unless too hastily formed by the sudden cooling of the liquor, or disturbed in their coalescence by agitation, or other like causes, prove transparent and of regular figures, resembling in appearance the natural sprig-crystals.

Salts, dissolved in a large quantity of water, may in like manner be recovered from it in their crystalline form, by boiling down the solution, till so much of the fluid has exhaled as that the remainder will be too little to keep the salt dissolved when grown perfectly cold. It is customary to continue the evaporation till the salt shows a disposition to concrete even from the hot water, by forming a pellicle on that part which is least hot, viz. on the surface. If large, beautiful, and perfectly-figured crystals are required, this point is somewhat too late: for if the salt thus begins to coalesce whilst considerably hot, on being removed into a cold place its particles will run too hastily and irregularly together; the pellicle at the same time falling down through the liquor, and thus proving a farther disturbance to the regularity of the crystallisation.

In order to perform this process in perfection, the evaporation must be gentle, and continued no longer than till some drops of the liquor, let fall on a cold glass plate, discover crystalline filaments. When this mark of sufficient exhalation appears, the vessel is to be immediately removed from the fire into a less warm, but not cold place, and covered with a cloth to prevent the access of cold air, and consequently the formation of a pellicle.

"The fixed alkalis, especially the mineral, when fully saturated with fixed air or the aerial acid, assume a crystalline form; but these crystals are not so perfect as when the same alkalis are united with the other acids. The volatile alkalis cannot crystallise, because they escape before the menstruum exhales."

Some even of the other neutral salts, particularly those of which certain metallic bodies are the basis, are so strongly retained by the aqueous fluid, as not to exhibit any appearance of crystallisation, unless some other substance be added, with which the water has a greater affinity. The Table of Affinity shows that such a substance is spirit of wine; by the prudent addition of which, these kinds of salts separate freely from the menstruum, and form large and beautiful crystals, scarce obtainable by any other means.

The operator must be careful not to add too much of the spirit; lest, instead of a gradual and regular crystallisation, the basis of the salt be hastily precipitated in a powdery form. One-twentieth part of the weight of the liquor will in most cases be a sufficient, and in some too large a quantity.

Different salts require different quantities of water to keep them dissolved: and hence, if a mixture of two or more be dissolved in this fluid, they will begin to separate and crystallise at different periods of the evaporation. Upon this foundation, salts are freed, not only from such impurities as water is not capable of dissolving and carrying through the pores of a filter, but likewise from admixtures of one another; that which requires most water to dissolve in, shooting first into crystals.

"It is proper to remark, that a salt, when crystallising, still retains and combines with a certain portion of water: this water is not essential to the salt as a salt, but is essential to a salt as being crystallised; it is therefore called by the chemists the *water of crystallisation*. The quantity of

this water varies in different salts: In some of them, as in Glauber's salt, alum, and copperas, it makes up about one half of their weight; in others, as in nitre, common salt, and especially selenites, it is in very small quantity. As salts unite to the water of their crystallisation by their attraction for water alone, we accordingly find that this water is perfectly pure, and contains, in complete crystals, no substance foreign to the salt. Salts not only differ in the quantity of water necessary to their solution, but some of them also (though by no means generally) are soluble with equal facility in cold as in hot water. Sometimes, then, we employ evaporation; sometimes cooling; and at other times both these expedients are used alternately, to separate different salts dissolved in the same liquor. It is obvious, then, that those which are nearly, or equally soluble in cold as in boiling water, can only be crystallised by evaporation; those again, which are much more soluble in boiling than in cold water, are to be separated by cooling. Of the first of these is common or marine salt: of the latter is nitre or salpêtre. It remains, then, that we should know how to separate these two salts, when both of them happen to be dissolved in the same water: this method consists in alternate evaporation and cooling. If in such a solution a pellicle appears in the boiling liquor before crystals can be formed in the cooling, we then conclude that the common salt predominates: In this case we evaporate the water, and separate the common salt as fast as it is formed, till the liquor on cooling shows crystals of nitre: we then allow the nitre to crystallise by cooling. After all the nitre which had been dissolved by the heat alone has now separated by cooling, we resume the evaporation, and separate the common salt till the cooling liquor again shows crystals of nitre. We thus repeat the same series of operations, by which means these two salts may be alternately crystallized; the one by evaporation, the other by cooling, till they are perfectly separated from each other. If in the beginning of the operation the liquor had, upon trial, given crystals of nitre by cooling before any pellicle appeared on its surface when boiling, this would have indicated that the nitre was predominant in the solution: the nitre in this case would have been crystallised, first by cooling, till the quantity of nitre exceeding that of the common salt having been separated, the common salt would next have crystallised in its turn by evaporation. The example we have now given may be applied to other salts, or to a number of salts which may happen to be dissolved in the same liquor. For though there are few so completely soluble in cold water as common salt, and few so scantily as nitre; yet there are scarcely two salts which either precisely show the same solubility or the same appearance of their crystals. It is obvious, too, that by crystallisation we discover the peculiar predominant salt in any solution of mixed saline matter; but as one salt always takes down a small portion of another, it is necessary to redissolve the first products, and repeat the crystallisation, in order to render the separation complete.

“ We see, then, that though the crystal appearance and form does not alter the salt itself, yet that this process affords an elegant method of discovering compound solutions of salts, of judging of their purity, and, lastly, of separating different salts very completely from one another. Crystallisation, then, is one of the most important agents in pharmacy, and ought to be well understood. We shall attempt to explain the particular

cular management in crySTALLISING particular salts, when we come to treat of each of them apart."

S E C T. V.

PRECIPITATION.

BY this operation, bodies are recovered from their solutions, by means of the addition of some other substance, with which either the menstruum, or the body dissolved, have a greater affinity than they have with one another.

Precipitation, therefore, is of two kinds; one, where the substance superadded unites with the menstruum, and occasions that before dissolved to be thrown down; the other, in which it unites with the dissolved body, and falls along with it to the bottom. Of the first, we have an example in the precipitation of sulphur from alkaline lixivium by the means of acids; of the second, in the precipitation of mercury from aquafortis by sea-salt, or its acid.

The subjects of this operation, as well those which are capable of being precipitated as those which precipitate them, will readily appear from inspection of the Table of Affinity. The manner of performing it is so simple, as not to stand in need of any particular directions; no more being required, than to add the precipitant by degrees, so long as it continues to occasion any precipitation. When the whole of the powder has fallen, it is to be well *edulcorated*, that is, washed in several fresh parcels of water, and afterwards dried for use.

Where metals are employed as precipitants, as in the purification of martial vitriol from copper by the addition of fresh iron, they ought to be perfectly clean and free from any rusty or greasy matter; otherwise they will not readily, if at all, dissolve, and consequently the precipitation will not succeed; for the substance to be precipitated separates only by the additional one dissolving and taking its place. The separated powder, oftentimes, instead of falling to the bottom, lodges upon the precipitant; from which it must be occasionally shaken off, for reasons sufficiently obvious.

Though, in this operation, the precipitated powder is generally the part required for use, yet some advantage may frequently be made of the liquor remaining after the precipitation. Thus when fixed alkaline salt is dissolved in water, and sulphur dissolved in this lixivium; the addition of acids separates and throws down the sulphur, only in virtue of the acid uniting with, and neutralizing the alkali by which the sulphur was held dissolved: consequently, if the precipitation is made with the vitriolic acid, and the acid gradually dropt in till the alkali is completely satiated, that is, so long as it continues to occasion any precipitation or turbidness, the liquor will yield, by proper evaporation and crySTALLISATION, a neutral salt, composed of the vitriolic acid and fixed alkali, that is, vitriolated tartar. In like manner, if the precipitation is made with the nitrous acid, a true nitre may be recovered from the liquor; if with the marine, the salt called *spiritus salis marini coagulatus*; and if with the acid of vinegar, the *sal diureticus*.

S E C T. VI.

EVAPORATION.

THIS is a third method of recovering solid bodies from their solutions, effected by the means of heat; which *evaporating* the fluid part, that is, forcing it off in steam, the matter which was dissolved therein is left behind in its solid form.

“ The general rules for evaporation are, To place the matter in a flat, shallow, wide vessel, so that a large surface of the liquor may be presented to the air; for it is only from the surface that evaporation takes place. The degree of heat ought to be proportioned to the volatility of the substance to be evaporated, and to the degree of fixity of the matter to be left: Thus, the less fixed the matter to be left is, and the more strongly it adheres to the volatile parts, the less the degree of heat ought to be; and in such cases, too, a forcible current of air is sometimes scarcely admissible: On the contrary, when the matter to be evaporated is not very volatile, and when the matter to be left is very fixed, and does not adhere strongly to the volatile part, the evaporation may be urged by a strong heat, aided by a current of air directed upon the surface of the liquor.”

This process is applicable to the solutions of all those substances which are less volatile than the menstruum, or which will not exhale by the heat requisite for the evaporation of the fluid; as the solutions of fixed alkaline salts; of the gummy, gelatinous, and other inodorous parts of vegetables and animals in water; and of many resinous and odorous substances in spirit of wine.

Water extracts the virtues of sundry fragrant aromatic herbs, almost as perfectly as rectified spirit of wine: but the aqueous infusions are far from being equally suited to this process with those made in spirit; water carrying off the whole odour and flavour of the subject, which that lighter liquor leaves entire behind it. Thus a watery infusion of mint loses in evaporation the smell, taste, and virtues of the herb; whilst a tincture drawn with pure spirit, yields, on the same treatment, a thick balsamic liquid, or solid gummy resin, extremely rich in the peculiar qualities of the mint.

In evaporating these kinds of liquors, particular care must be had, towards the end of the process, that the heat be very gentle; otherwise the matter as it grows thick will burn to the vessel, and contract a disagreeable smell and taste: this burnt flavour is called an *empyreuma*. The liquor ought to be kept stirring during the evaporation; otherwise a part of the matter concretes on the surface exposed to the air, and forms a pellicle which impedes the farther evaporation. More particular directions for performing this operation to the greatest advantage, will be given hereafter in the Second Part.

S E C T. VII.

DISTILLATION.

IN the foregoing operation fluids are rarefied by heat into steam or vapour, which is suffered to exhale in the air, but which the business of this is to collect and preserve. For this purpose the steam is received in proper vessels, luted to that in which the subject is contained; and being there cooled, condenses into a fluid form again.

There are two kinds of distillation: by the one, the more subtile and volatile parts of liquors are elevated from the grosser; by the other, liquids incorporated with solid bodies are forced out from them by vehemence by fire.

To the first belong, the distillation of the pure inflammable spirit from vinous liquors; and of such of the active parts of vegetables as are capable of being extracted by boiling water or spirit, and at the same time of arising along with their steam.

As boiling water extracts or dissolves the essential oils of vegetables, whilst blended with the other principles of the subject, without saturation, but imbibes only a determinate, and that a small proportion of them in their pure state; as these oils are the only substances, contained in common vegetables, which prove totally volatile in that degree of heat; and as it is in them, that the virtues of aromatics, and the peculiar odour and flavour of all plants, reside: it is evident, that water may be impregnated, by distillation, with the more valuable parts of many vegetables: that this impregnation is limited, the oil arising in this process pure from those parts of the plant which before rendered it soluble in water without limitation; hence greatest part of the oil separates from the distilled aqueous liquor, and, according to its greater or less gravity, either sinks to the bottom or swims on the surface: that consequently infusions and distilled waters are greatly different from one another: that the first may be rendered stronger by pouring the liquor on fresh parcels of the subject; but that the latter cannot be in like manner improved by *cobobating*, or re-distilling them from fresh ingredients. See Part II.

As the oils of many vegetables do not freely distill with a less heat than that in which water boils; as rectified spirit of wine is not susceptible of this degree of heat; and as this menstruum totally dissolves these oils in their pure state; it follows, that spirit elevates far less from most vegetables than water; but that nevertheless the distilled spirit, by keeping all that it does elevate, perfectly dissolved, may, in some cases, prove as strong of the subject as the distilled water. "The more gentle the heat, and the slower the distillation goes on, the volatile parts are the more perfectly separated in their native state."

The apparatus made use of for distilling spirits, waters, and oils, consist of a *still*; or copper vessel, for containing the subject, on which is luted a large head with a *swan-neck*. The vapour arising into the head, is hence conveyed throw a *worm*, or long spiral pipe, placed in a vessel of cold water called a *refrigeratory*; and being their condensed, runs down into a *receiver*. In the second part of this work, we shall give some improvements

ments in this apparatus for particular purposes ; with directions for performing the several processes to the greatest advantage.

It may be observed, that as the parts which are preserved in evaporation cannot arise in distillation, the liquor remaining after the distillation, properly depurated and inspissated, will yield the same extracts as those prepared from the tincture or decoction of the subject made on purpose for that use ; the one of these operations collecting only the volatile parts, and the other the more fixed : so that where one subject contains medicinal parts of both kinds, they may thus be obtained distinct, without one being injured by the process which collects the other.

THE subjects of the second kind of distillation are, the gross oils of vegetables and animals, the mineral acid spirits, and the metallic fluid quicksilver ; which as they require a much stronger degree of heat to elevate them than the foregoing liquors can sustain, so they likewise condense without arising so far from the action of the fire. The distillation of these is performed in low glass vessels, called, from their neck being bent to one side, *retorts* : to the farther end of the neck a *receiver* is luted, which standing without the furnace, the vapours soon condense in it, without the use of a refrigeratory : nevertheless, to promote this effect, some are accustomed, especially in warm weather, to cool the receiver, by occasionally applying wet cloths to it, or keeping it partly immersed in a vessel of cold water.

The vapours of some substances are so sluggish, or strongly retained by a fixed matter, as scarce to arise even over the low neck of the retort. These are most commodiously distilled in freight-necked earthen vessels, called *longnecks*, laid on their sides, so that the vapour passes off laterally with little or no ascent : a receiver is luted to the end of the neck without the furnace. In this manner, the acid spirit of vitriol is distilled. The matter which remains in the retort or longneck, after the distillation, is vulgarly called *caput mortuum*.

In these distillations, a quantity of elastic air is frequently generated ; which, unless an exit is allowed it, blows off or bursts the receiver. The danger of this may in good measure be prevented, by slowly raising the fire ; but more effectually, by leaving a small hole in the luting, to be occasionally opened or stoppt with a wooden plug ; or inserting at the juncture an upright pipe of such a height, that the steam of the distilling liquor may not be able to rise to the top : " but it is still better done by fitting to the apparatus other vessels, by which their vapours may be condensed."

S E C T. VIII.

SUBLIMATION.

ALL fluids are volatile by heat, and consequently capable of being separated, in most cases, from fixed matters, by the foregoing process ; so various solid bodies are subjected to a similar treatment. Fluids are said to *distill*, and solids to *sublime* ; though sometimes both are obtained in one and the same operation. If the subliming matter concretes into

into a mass, it is commonly called a *sublimate*; if into a powdery form, *flowers*.

The principal subjects of this operation are, volatile alkaline salts; neutral salts, composed of volatile alkalis and acids, as sal ammoniac; the salt of amber, and flowers of benzoine; mercurial preparations; and sulphur. Bodies of themselves not volatile, are frequently made to sublime by the mixture of volatile ones: thus iron is carried up by sal ammoniac in the preparation of the *flores martiales*.

The fumes of solid bodies, in close vessels, rise but little way, and adhere to that part of the vessel where they concrete. Hence a receiver or condenser is less necessary here than in the preceding operation; a single vessel, as a *matrass*, or tall *vial*, or the like, being frequently sufficient. The most commodious apparatus for the sublimation of particular substances, and the most advantageous method of conducting the several processes, will be delivered in the Second Part.

S E C T. IX.

EXPRESSION.

THE *press* is chiefly made use of for forcing out the juices of succulent herbs and fruits, and the insipid oils of the unctuous seeds and kernels.

The harder fruits, as quinces, require to be previously well beat or ground; but herbs are to be only moderately bruised. The subject is then included in a hair-bag, and pressed betwixt wooden plates, in the common screw-press, as long as any juice runs from it. See Part III.

THE expression of oils is performed nearly in the same manner as that of juices; only here, iron-plates are substituted for the wooden ones there made use of. The subject is well pounded, and included in a strong canvass bag, betwixt which and the plates of the press a haircloth is interposed.

The insipid oils of all the unctuous seeds are obtained, uninjured, by this operation, if performed without the use of heat; which though it greatly promotes the extraction of the oil, at the same time impresses an ungrateful flavour, and increases its disposition to grow rancid.

The oils expressed from aromatic substances generally carry with them a portion of their essential oil: hence the smell and flavour of the expressed oils of nutmegs and mace. They are very rarely found impregnated with any of the other qualities of the subject: oil of mustard-seed, for instance, is as soft and void of acrimony as that of almond, the pungency of the mustard remaining entire in the cake left after the expression.

S E C T. X.

EXSICCATION.

THERE are two general methods of exsiccating or drying moist bodies; in the one, their humid parts are exhaled by heat; in the other, they are imbibed or absorbed by substances, whose soft and spongy texture

texture adapts them to that use. Bodies intimately combined with, or dissolved in a fluid, as recent vegetables and their juices, require the first: such as are only superficially mixed, as when earthy or indissoluble powders are ground with water, are commodiously separated from it by the second.

Vegetables and their parts are usually exsiccated by the natural warmth of the air: the assistance of a gentle artificial heat, may nevertheless, in general, be not only safely, but advantageously had recourse to. By a moderate fire, even the more tender flowers may be dried, in a little time, without any considerable loss, either of their odour or lively colour; which would both be greatly injured or destroyed by a more slow exsiccation in the air. Some plants indeed, particularly those of the acrid kind, as horse-radish, scurvy-grass, and arum, lose their virtues by this process, however carefully performed; but far the greater number retain them unimpaired, and oftentimes improved.

The thicker vegetable juices may be exsiccated by the heat of the sun; or, where this is not sufficient, by that of a water-bath, or an oven moderately warm. The thinner juices may be gently boiled till they begin to thicken, and then treated as the foregoing. This process, termed *inspissation* or *evaporation*, has been spoken of already. The juices of some plants, as arum root, briony root, orris root, wild cucumbers, &c. separate, upon standing for some time, into a thick part, which falls to the bottom; and a thin aqueous one, which swims above it: this last is to be poured off, and the first exsiccated by a gentle warmth. Preparations of this kind have been usually called *faculae*; that of the cucumber, to be spoken of in its place, is the only one which practice now retains.

Indissoluble bodies, mixed with water into a thick consistence, may be easily freed from the greatest part of it, by dropping them on a *chalk-stone*, or some powdered chalk pressed into a smooth mass, which readily imbibes their humidity. Where the quantity of fluid is large, as in the edulcoration of precipitates, it may be separated by decantation or filtration.

"We before observed, that one of the principal circumstances favouring fermentation, was a certain degree of moisture. Exsiccation is therefore employed to dissipate humidity, and render vegetables thereby less liable to those changes produced by a kind of insensible fermentation."

S E C T. XI.

COMMINATION.

COMMINATION is the bare reduction of solid coherent bodies into small particles or powder. The methods of effecting this are various, according to the texture of the subject.

Dry friable bodies, or such as are brittle and not very hard, and mixtures of these with somewhat moist ones, are easily *pulverised* in a mortar.

For very light, dry substances, resins, and the roots of tenaceous texture, the mortar may in some cases be previously rubbed with a little sweet oil, or a few drops of oil to be occasionally added: this prevents the finer powder of the first from flying off, and the others from cohering under the pestle. Camphor is commodiously powdered by rubbing it with a little rectified spirit of wine.

Though

Tough substances, as woods, the peels of oranges and lemons, &c. are most conveniently *rasped*; and soft oily bodies, as nutmegs, passed through a *grater*.

The comminution of the harder minerals, as calamine, crystal, flint, &c. is greatly facilitated by *extinction*; that is, by heating them red-hot, and quenching them in water: by repeating this process a few times, most of the hard stones become easily pulverable. This process, however, is not to be applied to any of the alkaline or calcareous stones; lest, instead of an insipid powder, we produce an acrimonious calx or lime.

Some metals, as tin, though strongly cohering in their natural state, prove extremely brittle when heated, insomuch as to be easily divided into small particles by dextrous agitation. Hence the officinal method of pulverising tin, by melting it, and, at the instant of its beginning to return into a state of solidity, briskly shaking it in a wooden box. The comminution of metals, in this manner, is termed by the metallurgists *granulation*.

On a similar principle, certain salts, as nitre, may be reduced into powder in large quantity, by dissolving them in boiling water, setting the solution over a moderate fire, and keeping the salt constantly stirring during its exsiccation, so as to prevent its particles, disjoined by the fluid, from reuniting together into larger masses.

Powders are reduced to a great degree of fineness by *trituration*, or rubbing them, for a length of time, in a mortar. Such as are not dissoluble in water, or injured by the admixture of that fluid, are moistened with it into the consistence of a paste, and *levigated* or ground on a flat smooth marble or iron plate; or where a large quantity is to be prepared at a time, in mills made for that use.

Comminution, though one of the most simple operations of pharmacy, has, in many cases, very considerable effects. The resinous purgatives, when finely triturated, are more easily soluble in the animal fluids, and consequently prove more cathartic, and less irritating, than in their grosser state. Crude antimony, which, when reduced to a tolerably fine powder, discovers little medicinal virtue, if levigated, to a great degree of subtilty, proves a powerful alterative in many chronical disorders.

By comminution, the heaviest bodies may be made to float in the lightest fluids *, for a longer or shorter time, according to their greater or less degree of tenuity. Hence we are furnished with an excellent criterion of the fineness of certain powders, and a method of separating the more subtle parts from the grosser, distinguished by the name of *elutriation*, or *washing over*. See Part III.

S E C T.

* Some attribute this effect to a diminution of the specific gravity of the body; and, at the same time, suppose the peculiar virtues of certain medicines, particularly mercury, to be in great measure owing to their gravity. If these hypotheses were just, it should follow, that the mercurial preparations, by being finely comminuted, would lose proportionably of their efficacy; and so indeed mercurius dulcis, for instance, has been supposed to do. But experience shows, that this is far from being the case; and that comminution by no means lessens, but rather increases, its power: when reduced to a great degree of subtilty, it passes readily into the habit, and operates, according to its quantity, as an alterative or a sialogogue; whilst in a grosser form, it is apt to irritate the stomach and bowels, and run off by the intestines, without being conveyed into the blood.

S E C T. XII.

FUSION.

FUSION is the reduction of solid bodies into a state of fluidity by fire. Almost all natural substances, the pure earths and the solid parts of animals and vegetables excepted, melt in proper degrees of fire; some in a very gentle heat, whilst others require its utmost violence.

Turpentine, and other soft resinous substances, *liquefy* in a gentle warmth; wax, pitch, sulphur, and the mineral bitumens, require a heat too great for the hand to support; fixed alkaline salts, common salt, nitre, require a red, or almost white heat to melt them; and glass, a full white heat.

Among metallic substances, tin, bismuth, and lead, flow long before ignition: antimony likewise melts before it is visibly red-hot, but not before the vessel is considerably so: the regulus of antimony demands a much stronger fire. Zinc begins to melt in a red heat; gold and silver require a low white heat; copper, a bright white heat; and iron, an extreme white heat.

One body, rendered fluid by heat, becomes sometimes a menstruum for another, not fusible of itself in the same degree of fire. Thus red-hot silver melts on being thrown into melted lead less hot than itself: and thus if steel, heated to whiteness, be taken out of the furnace, and applied to a roll of sulphur, the sulphur instantly liquefying, occasions the steel to melt with it; hence the *chaylts cum sulphure* of the shops. This concrete, nevertheless, remarkably impedes the fusion of some other metals, as lead; which when united with a certain quantity of sulphur is scarce to be perfectly melted by a very strong fire. Hence the method, described in its place, of purifying zinc; a metal which sulphur has no effect upon from the lead so frequently mixed with it.

Sulphur is the only unmetallic substance which mingles in fusion with metals. Earthy, saline, and other like matters, even the calces and glasses prepared from metals themselves, float distinct upon the surface, and form what is called *scoria* or dross. Where the quantity of this is large in proportion to the metal, it is most commodiously separated by pouring the whole into a conical mould: the pure metal or *regulus*, though small in quantity, occupies a considerable height in the lower narrow part of the cone; and when congealed, may be easily freed from the scoriæ by a hammer. The mould should be previously greased, or rather smoked, to make the metal come freely out; and thoroughly dried and heated, to prevent the explosion which sometimes happens from the sudden contact of melted metals with moist bodies.

S E C T. XIII.

CALCINATION.

BY calcination is understood the reduction of solid bodies, by the means of fire, from a coherent to a powdery state, accompanied with a change of their quality; in which last respect this process differs from comminution.

To this head belong the burning of vegetable and animal matters, otherwise called *ustion*, *incineration*, or *concremation*; and the change of metals into a powder, which in the fire either does not melt, or *vitrifies*, that is, runs into glass.

The metals which melt before ignition, are calcined by keeping them in fusion for some time. The free admission of air is essentially necessary to the success of this operation; and hence, when the surface of the metal appears covered with calx, this must be taken off or raked to one side, otherwise the remainder excluded from the air will not undergo the change intended. If any coal, or other inflammable matter that does not contain a mineral acid, be suffered to fall into the vessel, the effect expected from this operation will not be produced, and part of what is already calcined will be *revived* or *reduced*; that is, it will return into its metallic form again.

Those metals which require a strong fire to melt in, calcine with a much less heat than is sufficient to make them flow. Hence the burning or *scorification* of such iron or copper vessels as are long exposed to a considerable fire without defence from the air. Gold and silver are not calcinable by any degree of fire.

In calcination, the metals visibly emit fumes; nevertheless the weight of the calx proves greater than that of the metal employed. The antimonial regulus gains about one eleventh part of its weight; zinc, sometimes one-tenth; tin, above one-sixth; and lead in its conversion into minium, oftentimes one-fourth.

The calcination of metallic bodies (gold, silver, and mercury excepted) is greatly promoted by nitre. This salt exposed to the fire in conjunction with any inflammable substances, extricates their inflammable matter, and bursts with it into flame, accompanied with a hissing noise. This process is usually termed *deflagration* or *detonation*.

All the metallic calces and scorix are revived into their metallic state by fusion with any vegetable or animal inflammable matter. They are all more difficult of fusion than the respective metals themselves; and scarcely any of them, those of lead and bismuth excepted, can be made to melt at all, without some addition, in the strongest fire that can be produced in the common furnaces. The additions called *fluxes*, employed for promoting the fusion, consist chiefly of fixed alkaline salts. A mixture of alkaline salt with inflammable matter, as powdered charcoal, is called a *reducing flux*, as contributing at the same time to bring the calx into fusion, and to revive it into metal. Such a mixture is commonly prepared from one part of nitre and two parts of tartar, by grinding them well together, setting the powders on fire with a bit of coal or a red-hot iron, then covering the vessel, and suffering them to deflagrate or burn till they are changed into a black alkaline coaly mass. This is the common reducing
flux

flux of the chemists, and is called from its colour the *black flux*. Metallic calces or scorizæ, mingled with twice their weight of this compound, and exposed to a proper fire in a close covered crucible, melt and resume their metallic form; but though they received an increase of weight in the calcination, the revived metal is always found to weigh considerably less than the quantity which the calx was made from.

(PART

P A R T II.

T H E

M A T E R I A M E D I C A.

WRITERS on the *Materia Medica* have taken great pains in arranging the various articles of which it is composed into different divisions and subdivisions, according to their real or reputed medicinal powers.

It has been imagined, that “the whole *Materia Medica* is reducible under the three distinctions of *Alteratives, Evacuants, and Restoratives*: “the first comprehending all that has any power to alter the constitution, without sensibly increasing or diminishing any of the natural evacuations; the second, whatever visibly promotes those discharges; and the third, all that contributes to lessen them, and make the increase greater than the waste.” These divisions being too general, they are broken into subdivisions; and these again are farther divided into different classes, under more restrained denominations, as *cardiac, carminative, hysteric, stomachic, &c.*

Specious as this plan may appear to be, I am afraid that the execution of it, to any useful purpose, would require a far more extensive knowledge of the nature and operation of medicines than has yet been attained to. A just and useful method of simples is scarcely to be expected, while those properties, on which the method is founded, are imperfectly known, and in many articles only conjectural.

In all the arguments that have been hitherto contrived upon this plan,
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there appears a striking incongruity among the several articles of which even the ultimate subdivisions are composed: substances extremely dissimilar being classed together, as cantharides and tea, tobacco and bran, hemlock and cowslips, scurvygrass and resins, arum root and liquorice, wormwood and parsneps, cinnamon and nettles, raspberries and chalk, artichokes and alum, cloves and coffee, mustard-seed and black cherries, &c. Nor are these incongruities to be laid always to the charge of the authors, the nature of the system itself rendering them often unavoidable: for the particular effect which intitles a medicine to a particular class, may be produced by substances very dissimilar and even opposite in their general powers. Thus the alvine excretions are restrained by starch, wax, tormentil root, opium. Among the capital diuretics are cantharides, nitre, fixed alkaline salts, squills. It should seem that the method of arrangement cannot be a just one, which requires substances so discordant to be ranked together; and which farther requires each of these substances to be ranked over again, in other classes, along with other substances to which they are equally discordant.

There is also a material imperfection in this scheme, even in the primary divisions. Steel and its preparations act, in different circumstances, both as evacuants and restoratives. Mercury and antimony afford, in their different preparations, both evacuants and alteratives; and there are many other drugs which are sometimes used as alteratives, and sometimes as evacuants. Indeed, all evacuants, in diminished doses, seem to act merely as alteratives. It should seem therefore that 'the division of the whole *Materia Medica* into alteratives, evacuants, and restoratives,' is a division not founded in nature, even if there was no objection to the vague meaning of the appellations themselves.

Cartheuser has divided the *Materia Medica* on a plan which appears more rational. Instead of the operations of medicines in the human body, which are precarious, complicated, and greatly diversified according to the dose, the preparation, and the circumstances of the patient, he takes for the basis of his arrangement their more simple, obvious, and constant properties, as bitterness, sweetness, astringency, acidity, &c. Having considered the nature of bitterness, for instance, in general, he examines what effects medicines possessed of this property are capable of producing in the body, and in what circumstances they may be expected to be serviceable; and then proceeds to an account of the particular bitters.

This method is of real use, but its use is limited to a small part of the *Materia Medica*. There are many of the medicinal simples in which we can distinguish no prevailing qualities of this kind; there are many in which different qualities are blended together; and many which, though similar in these kinds of qualities, are very dissimilar in their operations in the human body. Thus though gentian and aloes agree in having a bitter taste, and sugar and manna in being sweet, their medicinal virtues are respectively very different. Accordingly the author is obliged in some cases to depart from his general plan, and found the division on the medicinal effects: he makes one class of purgatives and emetics, and another of vaporose inebriants and narcotics. This last class consists of tobacco, elder-flowers, saffron, opium, and poppy seeds; substances certainly very discordant in all their qualities that relate to medicinal intentions.

In this work, instead of attempting a medicinal distribution of the simples, which I apprehend not to be practicable to any good purpose, and which, as hitherto executed, seems more likely to mislead the reader than to promote true knowledge, I shall take them in the order of the alphabet; and even in this order we shall seldom, perhaps, find substances more dissimilar come together, than those which have been joined into one class by some of the systematic writers. It may be proper, however, to premise some general observations on certain classes of medicines, in Cartheuser's manner, and thus to preserve the less exceptionable parts of his plan, with some amendments.

ACIDS.

- Class 1. *Vegetable* { native; as sorrel, wood sorrel, juice of lemons, oranges, barberries, and other fruits.
produced by fermentation; as vinegar and tartar.
- Class 2. *Mineral*: the acids of vitriol, nitre, common salt, "borax, and the ærial acid."

THE medical effects of acids, duly diluted and given in proper doses, are, to cool, quench thirst, correct a tendency to putrefaction, and allay inordinate motions of the blood. By these qualities, in hot bilious temperaments and inflammatory disorders, they frequently restrain immoderate hemorrhagies, and promote the natural secretions; in some kinds of fevers, they excite a copious diaphoresis, where the warm medicines, called *alexipharmac*, tend rather to prevent this salutary discharge.

Vegetable acids, particularly the native juices of certain plants and fruits, have some degree of a saponaceous quality; by means of which they attenuate or dissolve viscid phlegm, and thus prove serviceable in sundry chronical disorders. Inveterate scurvies have often yielded to their continued use, especially when given in conjunction with me-

dicines of the acrid or pungent kind. Experience has shown, that the acrid antiscorbutics have much better effects when thus managed, than when exhibited by themselves; hence in the *succi scorbutici* of our dispensatory, Seville orange juice is usefully joined to that of the *cochlearia* and *nasturtium*.

Mineral acids instantly coagulate the blood; and when injected into the veins of living animals, produce immediate death. It is therefore probable, that these salts do not enter the mass of blood. The vegetable acids are said to dilute the blood; and they seem capable of entering our circulating fluids: they are also possessed of a *refrigerant* power, by which they diminish the heat of the body and the spasmodic tension of the vessels. Hence in some fevers, they relax the constriction in the first passages, in the skin, and in the kidneys; whereby the

secretions of these several organs are restored or increased. The mineral acids, or their combinations with vinous spirits, when largely diluted with water, have a similar, but perhaps a less certain effect. The muriatic acid, however much diluted, or in whatever form it is exhibited, seems always to possess a very considerably stimulating power.

Though most of the mineral acids, when largely diluted, seem to possess a refrigerant power; yet some of them (especially the vitriolic when taken in a less diluted state) exert an astringent and tonic power; and are thereby useful in certain affections of the stomach proceeding from weakness and indigestion: it is often proper to cover their acrimony by combining them with mucilaginous matters; and when taken in this way, the vitriolic acid is an useful remedy in the *melena* of the moderns, the disease supposed by the ancients to be a purging of their *atra-bilis*, or black bile.

The acid of borax, or the sedative salt of Homberg, was formerly in great reputation in the cure of many febrile affections: but, as we before observed, its fame has passed away, and no notice is now taken of it by practitioners. Fixed air, or the ærial acid, has also been highly extolled in the cure of scurvy and other putrid diseases, in *phthisis pulmonalis*, and in ill-conditioned ulcers: it seems indeed to possess very considerable antiseptic powers; but it has also been alleged, that it has cured cancers, and dissolved the stone

in the bladder forsooth. It is frequently taken by throwing into the stomach a portion of mild or aerated alkali, and forthwith a quantity of any acid; or the acid and alkali are first mixed, and then taken in what is called the state of effervescence. When exhibited in either of these forms, it has been supposed to show a tonic power upon the stomach; and this indeed appears probable. These are the famous anti-emetic mixtures; and indeed they may be used in any case where we wish to administer fixed air: but saline mixtures have also proved anti-emetic after the effervescence had ceased; and it is remarkable, that in dyspeptic affections, we often find it proper to use magnesia in its calcined state in order to avoid the evolution of this very acid. Water impregnated with this acid, or the artificial Pyrmont waters, have been used for the same purposes as the effervescing mixtures. But, after all, the medical effects of fixed air have not yet been fully understood, or at least explained to us.

Vegetable acids are prejudicial in cold, pale, phlegmatic habits, where the vessels are lax, the circulation languid, bile deficient, and the power of digestion weak. In these cases, an acid is often generated in the stomach, from milk and moist vegetable food; which, whilst it continues in the first passages, occasions uneasiness about the stomach, flatulencies, sometimes griping pains of the bowels, and vomitings.

INSIPID EARTHS *capable of* ABSORBING ACIDS.

Oyster-shells,
 Crabs-claws, and eyes so called,
 Coral, red and white,
 Pearls,
 Bezoar,
 Chalk,

Some marles,
 Magnesia,
 Limestones,
 Marbles,
 Spars.

THE virtues of these substances are, to absorb or destroy acidities in the first passages, and consequently to remove such disorders as proceed from that cause. The cordial, alexipharmac, antifebrile, and other like virtues attributed to these medicines, appear to have little foundation; or at best are only secondary ones. 'In fevers, attended with a tendency to putrefaction of the fluids, these earths may do very much harm; as they are found, by the experiments of Sir John Pringle, to possess a septic power.' When united with the acid, they form a neutral saline compound, possessing some degree of an aperient and detergent quality, though too inconsiderable to be in general regarded.

The absorbent earths were all strangers to medicine in the earlier times; and their use does not seem to have been established before the last century; when some practitioners, from an opinion that most kinds of diseases proceeded from a preternatural acid, introduced a great variety of antacid bodies, both of the earthy and saline kind; and very liberally exhibited them on almost every occasion.

It is certain that in children, and adults of a weak constitution, and whose food is chiefly of the vegetable acescent kind, sundry disorders are occasioned by acidities: these readily discover themselves by

four eructations, the pale colour of the face; and in children, by the four smell and green colour of the alvine feces, which are sometimes so manifestly acid as to raise a strong effervescence with alkaline salts. In these cases, and these only, the use of absorbent earths is indicated.

If there are really no acid juices in the ventricle, these earths are apt to concrete with the mucous matter usually lodged there into hard indissoluble masses; which have sometimes been thrown up by vomit, or found in the stomach upon dissection. Hence indigestion, loss of appetite, nausea, vomiting, obstructions of the bowels, and other disorders. Sometimes the stomach and intestines have been found lined with a crust, as it were, of these earthy bodies; which must not only have prevented the separation of the gastric liquor, but likewise closed the orifices of the lacteal vessels, so as to obstruct the passage of the chyle into the mass of blood.

Some suppose the earthy powders capable (without the concurrence of any acid) of passing the lacteals along with the chyle; and allege, in support of this opinion, that when triturated with water, they are in part taken up, and carried with it through a filtre of paper; the filtrated liquor leaving,

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upon

upon evaporation, a portion of whitish earthy matter. This experiment (allowing the consequence to be justly drawn from it) is itself erroneous: the residuum proceeds from the earth naturally contained in the water, not from that employed in the experiment; for if pure distilled water be made use of, it will leave no residuum, though long triturated or digested with the earth.

All these bodies, particularly those of the animal kind, contain, besides their purely alkaline earth, a portion of glutinous matter. An instance of this we have in crabs-eyes; which, if macerated in the weaker acids, or the stronger sufficiently diluted with water, the earthy part will be dissolved, and the animal glue remain in form of a soft transparent mucilage. The glutinous substance increases their tendency to concrete in the stomach; and hence those which contain least thereof should be preferred to the others. The mineral earths contain the least of this kind of matter, and some of them are very easy of solution; chalk for instance; which may therefore be given with greater safety than the animal absorbents. These substances, divested of their conglutinating matter by means of fire, are reduced in-

to acrimonious calces or limes, and thus become medicines of a different class. "They are also, however, used for the same purposes as the aerated earths, and in the form of lime-water, they are especially adapted for those cases accompanied with much flatulence, where the evolution of fixed air is often hurtful: and this evolution will always take place when an aerated earth is presented to the acid matter in the stomach."

The teeth, bones, hoofs, and horns of animals, consist of somewhat similar principles with the animal absorbents above mentioned ("see *Cornu cervi calcinatio*"); the quantity of gelatinous matter is so large, as to defend the earthy part from the action of weak acids; whilst the earth, in its turn, protects the gluten from being easily dissolved by watery liquors. Hence these bodies, in their crude state, though recommended as possessing singular virtues, are not found to have any virtue at all.

Experiments have been made for determining the degree of solubility, or comparative strength of these earths; the principal of which are arranged in the two following tables, one taken from Langius, and the other from Homberg.

Table

Table of the quantity of Acid destroyed by different Absorbents.

Ten grains of	Some kind of limestones	destroyed the acidity of	160	Drops of spirit of falt.
	Oyster-shells		120	
	Chalk		100	
	Shells of garden-snails		100	
	Calcined cray-fish		100	
	Pearl		80	
	Tooth of the sea-horse		80	
	Volatile salts		80	
	Fixed salts		60	
	Coral, red and white		60	
	Crabs-eyes		50	
	Egg-shells		50	
	Mother of pearl		50	
	Crabs-claws		40	
	Jawbone of the pike fish		30	

Table of the quantity of absorbent Earths soluble in Acids.

	Grains.	
576 Grains of spirit of salt, dissolved of	Crabs-eyes	216
	Mother of pearl	144
	Pearls	128
	Oyster-shells	156
	Hartshorn	165
	Coral	186
	Oriental bezoar	118
	Occidental bezoar	123
	Quick-lime	199
Slacked lime	193	
576 Grains of spirit of nitre dissolved of	Crabs-eyes	297
	Mother of pearl	202
	Pearls	219
	Oyster-shells	236
	Hartshorn	234
	Coral	233
	Oriental bezoar	108
	Occidental bezoar	144
	Quick-lime	180
Slacked lime	216	

These experiments do not sufficiently ascertain the point intended by them; in the first sett, the quantity of acid is too vague and indetermined: in the second, we are not told whether the acid was perfectly

saturated: and in both, the acids made use of were so very different from any that can be supposed ever to exist in the human body, that little can be concluded from them with regard to the medical effects of these absorbents. Trial should have been made with the mild ve-

getable acids; as the juices of certain fruits, sour fermented liquors, or rather with sour milk. Nevertheless these tables, though not so perfect as could be wished, have their use in the hands of such as can make proper allowances.

EARTHS not dissoluble in Acids, or other Liquors.

The earths of this kind may be ranged in two classes:

Class 1. Hard crystalline Earths: As the Ruby, Garnet, Emerald, Sapphire, Hyacinth, and other precious Stones; Crystal, Flint, &c.

THESE kinds of substances were introduced into medicine, and many fabulous virtues attributed to them, by the superstition of the earlier ages. Some of them are still preserved in foreign pharmacopœias, but at length very justly expunged from our's, notwithstanding what some late writers of repute speak of their medical virtue. These indissoluble hard bodies are not capable of producing any other effect than by their rigid angular particles (which, though levigated with the utmost care, the microscope still discovers in them) to offend or wound the intestines. In levigation they wear off so much from the hardest marble instruments, as will equal or exceed their own weight: from this circumstance we may account for their having sometimes appeared to act as *absorbents*. Some of these stones, exposed to a

vehement fire, become in some measure friable; but nevertheless remain indissoluble. Most of the coloured ones by this treatment lose their colour, and in this state prove nearly of the same quality with common crystal; such are, the sapphire, emerald, amethyst, and cornelian; others melt into a blackish vitreous matter, from which a portion of iron is obtainable by proper fluxes; as the hyacinth and garnet. Geoffroy concludes from hence, that those stones really possess some medical virtues, depending upon their metallic part: but the quantity of metallic matter, sufficient to give them a considerable tinct, is so exceedingly small, and so inclosed in a stony matter, not at all soluble by any of the known menstrua, as scarce to admit of any possibility of its acting in the human body.

Class 2. Softer Earths; the talky, gypseous, and argillaceous.

THE talcs and gypsums have rarely been used as medicines. Some of the former, from their

unctuous softness and silver hue, stand recommended externally as cosmetics; and some of the latter,

on little better foundation, internally as astringents. But they have long been deservedly rejected by the judicious practitioners. They seem to possess the ill qualities of the alkaline earths (concreting with the mucus of the stomach, &c.) without any of their good ones.

Several of the clays, boles, and terra sigillatæ, were highly celebrated by the ancients as astringents and alexipharmacs, and some of them still continue in esteem; tho' it is certain they have no great claim to the virtues that have been attributed to them. Their real effects are, to give a greater degree of consistency to the fluids in the first passages, and in some measure defend the solids from their acrimony.

Most of these bodies contain, besides the tenacious indissoluble earth, which is their principal characteristic, (1) A portion of an earth soluble in acids, similar to those of the first section: (2) Of acid, separable by distillation in a strong fire; this acid is always of the same nature with that obtained from vitriol, sulphur, and alum; (3) The coloured ones contain likewise small quantities of iron, reducible, by inflammable fluxes, into its metallic form. In consequence of the

first of these ingredients, these earths may be looked upon in some measure as absorbent: the acid appears to be united with a part of the absorbent earth, into a saline compound, approaching to an aluminous nature: whence they have some degree of astringency: whether they receive any peculiar virtue from the iron, is greatly to be doubted; since it is in a very crude state, and in quantity extremely small.

These earths unite with water into a turbid liquor, slippery and smooth to the touch, and remain for some time suspended; the sand, grit, or other grosser matters which are often found naturally mingled with them, subsiding. They may be freed by means of acids from their alkaline earth; by coction in water, from their saline matter; and the coloured ones from their iron by digestion in aqua regis, the only menstruum we are acquainted with that will extract the ferruginous matter of argillaceous and bolar earths. Thus purified, they have all nearly the same appearance and qualities. Exposed to a strong fire, they lose their soft glutinous quality, and are reduced into hard masses indissoluble as at first.

GLUTINOUS Vegetable and Animal Substances.

Class 1. Vegetable.

Pure gums;
Tragacanth,
Seneca,
The gums of cherry, plum, and
other European trees.

Vegetables abounding with
mucilage:
Orchis roots,
Althæa root,
Quince-seeds, &c.

GUMS and mucilages are glutinous vegetable productions, of no particular taste or smell, soluble in water, but not in vinous

spirits, or in oils. (See page 15.) They differ from one another only in degree of tenacity: the more tenacious are called *gums*; those which

which are less so, *mucilages*. The first naturally exude from certain trees and shrubs; the latter are extracted by art. Almost all vegetable substances contain some portion of these, which after the resinous part has been extracted by spirit, may be separated from the

remaining-matter by means of water.

The general virtues of these kind of substances are, to sheath acrimony, and to diminish irritation in general. Hence they are found useful in certain cases of diarrhoea and strangury.

Class 2. *Animal.*

MOST animal substances (the fat excepted) contain a viscous matter, in many respects similar to the foregoing, and capable of being extracted by strong coction in water.

Animal glues and jellies have the general qualities of the vegetable gums and mucilages; with this difference, that the former are more nutritive, and apt to run into a

putrid state. Considered as the subjects of chemistry, the difference betwixt them is very great: those of the animal kind are changed by fire into a volatile alkaline salt, and a fetid oil; the vegetable into an acid liquor, and a very small portion of oily matter, considerably less fetid than the former.

Soft UNCTUOUS Substances.

Class 1. *Inspid vegetable Oils: and Substances abounding with them; as almonds, and the kernels of most fruits; linseed, and the medullary part of sundry other seeds.*

Class 2. *Animal Fats; as spermaceti.*

UNCTUOUS vegetables unite with water, by trituration, into a milky liquor: and give out their oil upon expression.—These kinds of oils and animal fats dissolve not in any menstruum except alkaline ones; which change their quality, and reduce them into a soap, dissoluble in water, but more perfectly in vinous spirits: from this compound, the oil may, by a skilful addition of acids, be recovered in a purer state than before, and rendered soluble, like essential oils, in spirit of wine. See p. 13.

The medical virtues of these substances are, to obtund acrimonious humours, and to soften and relax

the solids: hence their use internally, in tickling coughs, heat of urine, pains and inflammations; and externally, in tension and rigidity of particular parts. The milky solutions, commonly called emulsions, though much less emollient than the oils themselves or animal fats, have this advantage, that they may be given in acute or inflammatory distempers, without danger of the ill consequences which the others might sometimes produce: fats and oils, kept in a degree of heat no greater than that of the human body, soon become rancid and acrimonious; whilst emulsions tend rather to grow sour.

ASTRINGENTS.

Galls,
Tormentil root,
Bistort root,

Balaustines,
Terra Japonica,
Acacia, &c.

A Stringent substances are distinguished by a rough austere taste; and changing solutions of iron, especially those made in the vitriolic acid, of a dark purple or black colour.

Astringents yield their virtues by infusion both to water and vinous spirits; generally in greatest perfection to the former. Oils extract nothing from them; nor do they give over any of their virtue in distillation: nevertheless their astringency is considerably abated by evaporating decoctions of them to the consistence of an extract; and totally destroyed by long keeping.

'The medical effects of these substances are, to increase the power of cohesion in various parts of the animal body, to increase what may be called the tonic power of the system, to diminish the capacity of containing vessels, to diminish irritability, and perhaps, in some degree, sensibility: hence they are used in disorders proceeding from a debility or flaccid state of the solids; in hæmorrhagies, from a thinness of

the blood, laxity or rupture of the vessels; in preternatural discharges of other kinds, after the offending matter has been duly corrected or evacuated; and in external relaxations: they are also used as antiseptics.

In some cases, they produce the effects of aperients; the vessels, constricted and strengthened by them, being enabled to protrude the circulating juices with greater force.

A good deal of caution is requisite in the use of these medicines, especially those of the more powerful kind. In plethoric habits, inveterate obstructions, critical evacuations, and in all kinds of fluxes in general before the morbid matter has been expelled, or where there is any stricture or spasmodic contraction of the vessels; astringents prove eminently hurtful. Where critical dysenteries or diarrhœas are restrained by styptics, the acrimonious matter, now confined in the intestines, corrodes or inflames them; and sometimes occasions a gangrene of the parts.

SWEETS.

Sugar,
Honey,

Raisins,
Liquorice, &c.

THE vegetable sweets are a very numerous tribe; almost every plant that has been examined, discovering in some of its parts a saccharine juice. The bottoms of flowers, and most kinds of seeds and grain when they begin to vegetate, are remarkably sweet.

Vegetable sweets are extracted

both by water and vinous spirits; most readily by the first, but in greatest perfection by the latter. Nothing of their taste arises in distillation with either of these liquors: nevertheless, by long boiling with water they become somewhat less agreeable; but are not much injured by being treated in the

the same manner with rectified spirit.

The purer sweets, as sugar, promote the union of distilled oils with watery liquors, and prevent the separation of the butyraceous part from milk: from this quality, they are supposed to unite the unctuous part of the food with the animal juices. Hence some have concluded, that they increase fat: others, that they have a contrary effect, by preventing the separation of the unctuous matter which forms the fat from the blood: and others, that they render the juices thicker and more sluggish, retard the circulation and cuticular excretion, and thus bring on a variety of disorders. But sweets have not been

found to produce any of these effects in any remarkable degree: common experience shows, that their moderate, and even liberal, use is at least innocent; that they reconcile, not only to the palate, but the stomach also, substances of themselves disgusting to both; and thus render salutary what would otherwise be injurious to the body.

The unctuous and mucilaginous sweets, as the impure sugars, liquorice, &c. have a considerable degree of emollient and lubricating virtue.—Those accompanied with a manifest acid, as in the juices of most sweet fruits, are remarkably relaxing; and if taken immoderately, occasion diarrhoea and dysenteries, which sometimes have proved fatal.

ACRIDS.

ACRIDS are substances of a penetrating pungency. Applied to the skin, they inflame or exulce-

rate it; chewed, they occasion a copious discharge of saliva: and snuffed up the nose, provoke sneezing.

These substances, considered as the subject of pharmacy, may be divided into three classes;

yielding their acrimony

1. In distillation with water: as horse-radish, mustard, scurvy-grass, &c.
2. By infusion only: as the greater celandine, pyrethrum, &c.
3. Neither to infusion, nor distillation: as arum and dracunculus.

The general effects of acrid medicines are, to stimulate the vessels. In cold leucophlegmatic habits, and where the contractive power of the solids is weak, they prove powerful expectorants, deobstruents, diuretics, and emmenagogues; and if the patient is kept warm, sudorifics. In hot bilious constitutions, plethoric habits, inflammatory distempers, where there is already a degree of irritation, or where the viscera are unsound; these stimulating medicines prove highly prejudicial, and never fail to aggravate the disease.

Certain acrid substances have been lately recommended in dry convulsive asthma; of the efficacy of the squill in particular, for the cure of this disorder, several instances are related in the *Commercium Literarium* of Norimberg for the years 1737 and 1739. Cartheuser thinks, that not the asthma itself, but a particular effect of it, was removed by this medicine. He observes, that in all asthmas, the free circulation of the blood through the pulmonary vessels is impeded: and hence, during every paroxysm, the lungs are

in a kind of œdematous state: that if this œdema, becoming habitual, remains after the fit is over, it is either perpetually occasioning fresh ones, or gives rise to a dropsy of

the breast: that acrid medicines, by removing the œdema, remove what was originally an effect of the asthma, and in time a cause of its aggravation.

AROMATICS.

AROMATICS are substances of a warm pungent taste, and a more or less fragrant smell. Some of the spices are purely aromatic, as cubebs, pepper, cloves; some substances have a sweetness mixed with the aromatic matter, as angelica root, aniseed, fennel seed; some an astringency, as cinnamon; some a strong mucilage, as casia lignea; some a bitterness, as orange peel. The aromatic matter itself, contained in different subjects, differs also not a little in its pharmaceutic properties. It is extracted from all by rectified spirit of wine; from some in great part, from others scarcely at all, by water. The aromatic matter of some subjects, as of lemon peel, rises wholly in distil-

lation both with spirit and water; that of others, as cinnamon, rises wholly with water, but scarcely at all with spirit; while that of others, as pepper, is in part left behind after the distillation of water itself from the spice.

With regard to the general virtues of aromatics, they warm the stomach, and by degrees the whole habit, raise the pulse, and quicken the circulation. In cold languid cases, phlegmatic habits, and a weak flaccid state of the solids, they support the vis vitæ, and promote the salutary secretions. In hot bilious temperaments, plethoric habits, inflammatory indispositions, dryness and strictures of the fibres, they are generally hurtful.

BITTERS.

Gentian root,
Hops,

Lesser centaury,
Carduus, &c.

BITTERS for the most part yield their virtue both to watery and spirituous menstrua; some more perfectly to one, and others to the other. None of the substances of this class give over any thing considerable of their taste in distillation, either to water or to spirit; their bitterness remaining entire, and frequently improved, in the extracts. Such as are accompanied with flavour, as wormwood, may by this process be reduced into simple flavourless bitters.

These substances participate of the virtues of astringents and aromatics.

Their general effects are, to constringe the fibres of the stomach and intestines, to warm the habit, and promote the natural evacuations, particularly of sweat and urine. In weakness of the stomach, loss of appetite, indigestion, and the like disorders, proceeding from a laxity of the solids, these kinds of medicines do good service. Where the fibres are already too tense and rigid, where there is any immoderate heat or inflammation, bitters very sensibly increase the distemper; and if their use is continued, communicate it to the kidneys: hence the urine be-

comes

comes high coloured, small in quantity, and at length suppressed; a dropsy soon succeeding.

Bitter substances destroy insects,

and prevent putrefaction. Hence they are recommended as anthelmintic; and both externally and internally as antiseptics.

EMETICS and CATHARTICS.

Hellebore,
Jalap,
Ipecacoanha,

Colocynth;
Scammony,
Gamboge, &c.

THESE substances consist of a resinous part, in which the purgative or emetic quality most frequently resides; and a gummy saline one, which acts chiefly as a diuretic. The first is extracted or dissolved by vinous spirits; the latter by water. Nothing arises in distillation from either.

The acrid resins, exhibited by themselves, tenaciously adhere to the coats of the intestines, by their stimulating power irritate and inflame them, and thus produce sundry violent disorders. Hoffman relates, that he has sometimes observed convulsions, and a paralysis of both sides, from their use.

These inconveniencies may be avoided, by previously triturating them with substances capable of dividing their tenacious texture, and preventing their adhesion; by this means, they become mild and safe, operate without disturbance, and at the same time more effectually answer the purposes intended by them.

Some have endeavoured to correct the ill quality of the resinous purgatives, by the addition of acids and aromatics oils. Acids weaken their power, but have no other effect than what a diminution of the dose would equally answer. The pungent essential oils may serve to warm the stomach, make the medicine sit easier, and thus prevent the

nausea, which sometimes happens; but as soon as the resin begins to exert itself in the intestines, these oils, instead of correcting, increase its virulence; being themselves apt to occasion the inconveniencies which they are here intended to prevent, an irritation and inflammation of the bowels. Alkaline salts or soaps have a better effect; as they dispose the resin to solution, and promote its operation.

The medicines of this class seem to act by stimulating the coats of the stomach and intestines. If the irritation is strong and sudden, their action is quick and upwards; if slower, downwards. Cathartics, given in a liquid form, or in very sensible habits, often prove emetic; and emetics where mucus abounds, cathartic. They operate more violently in robust constitutions than in those of a contrary temperament; the vessels being in the former more tense and rigid, and consequently less capable of bearing an equal degree of irritation.

The action of these medicines is extended beyond the primæ viæ: This appears evident from the increase of the pulse which always accompanies their operation; and from the common observation of children being purged by the milk, if the nurse has taken a cathartic. Some of them, particularly hellebore,

bore, are said to purge, if only applied externally in issues. Purgatives, even of the more powerful kind, exhibited in suitable small doses, in conjunction with the milder aper-

ents, may be introduced into the habit, so as to prove notable deobstruents, diuretics, and diaphoretics, without acting sensibly by stool.

The foregoing observations are inserted, not with any view to a method of simples, but to give a general idea of the virtues of such medicinal substances as are possessed of the qualities which make the objects of the respective articles. I shall dwell no longer on general reflections, but proceed to an account of each of the simples separately.

ABIETIS *lignum, summitates, coni: Abietis conis sursum spectantibus sive maris C. B. Pini piceæ Lin. vel Abietis tenuiore folio fructu deorsum spectante Tourn. Pinus abietis Lio.* The silver and the red fir; their wood, tops, and cones.

These are large ever-green trees, frequent in the northern climates. The first is said to be found wild in some parts of England, and the second on the hills of Scotland. From these trees, in different parts of Germany, the Straßburgh turpentine is extracted, of which hereafter. The wood, and the fruit or cones gathered about the end of autumn, abound with resinous matter, and yield, in distillation with water, an essential oil, not greatly different from that obtained by the same means from turpentine. —The wood and tops of the fir-trees, on account of their resinous juices, are sometimes employed in decoctions and diet-drinks for promoting urine and sweat, purifying the blood and juices, and cleansing and healing internal ulcerations, particularly those of the urinary passages. See the article TEREBINTHINA.

ABROTANI MARIS *folia: Abrotani maris angustifolii majoris*

C. B. Artemisia abrotani Lin. Southernwood: the leaves [*E.*]

This is a shrubby plant, clothed with very finely divided leaves, of a greyish green colour: the flowers, which are very small and yellowish, hang downwards, several together from the middle of the branches to the top. It is a native of the warmer countries; in this it is cultivated in gardens; the leaves fall off every winter; the roots and stalks abide many years.

Southernwood has a strong, not very disagreeable smell; and a nauseous, pungent, bitter taste; which is totally extracted by rectified spirit, less perfectly by watery liquors. It is recommended as an anthelmintic; and in cold leucophlegmatic habits, as a stimulant, detergent, aperient, and sudorific. The present practice has almost entirely confined its use to external applications. The leaves are frequently employed in discutient and antiseptic fomentations; and have been recommended also in lotions and unguents for cutaneous eruptions, and the falling off of the hair.

ABROTANI FEMINÆ *folia: Abrotani feminae foliis teretibus C. B. Santolinæ chamæcyparissi, Lin.* Lavender-cotton; the leaves.

E

This

This plant is all over white and hoary: the leaves are composed of small knobs set in rows along a middle rib; the flowers stand upright on the tops of the stalks. It is raised in gardens, flowers in June and July, and holds its leaves all the winter.

The *abrotanum femina* is supposed to possess the same virtues with the *mas*; but in a less degree. For external purposes, the medical difference betwixt them is not very great: hence in fomentations (which is the principal intention they are usually applied to) the London College allows either to be taken instead of the other.—The *abrotanum femina* is recommended by some in hysteric and other female complaints: it has been customary among the common people to use a decoction of it in milk against worms.

ABSINTHII VULGARIS *folia*: *Absinthii vulgaris majoris* J. B. *Artemisia absinthii* Lir. Common wormwood; the leaves [L. E.]

The leaves of this sort of wormwood are divided into roundish segments, of a dull green colour above, and whitish underneath. It grows wild in several parts of England; about London, large quantities are cultivated for medicinal use: it flowers in June and July; and after having ripened its seeds, dies down to the ground, excepting a tuft of the lower leaves, which generally abides the winter.

Wormwood is a strong bitter; and was formerly much used as such, against weakness of the stomach, and the like, in medicated wines and ales. At present it is rarely employed in these intentions, on account of the ill relish and offensive smell with which it is accompanied. These it may be in part freed

from by keeping, and totally by long coction, the bitter remaining entire. An extract made by boiling the leaves in a large quantity of water, and evaporating the liquor with a strong fire, proves a bitter sufficiently grateful, without any disgusting flavour.—An oil distilled from this plant [L.] and a tincture of the dried flowering tops [E.] are kept in the shops.

ABSINTHII MARITIMI *summitates*: *Absinthii marini albi* Gerard. *Artemisia maritima* Lin. Sea-wormwood, commonly, but falsely, called Roman wormwood; the tops [L.]

The leaves of sea-wormwood are much smaller than those of the common, and hoary on the upper side, as well as the lower; the stalks also are hoary all over. It grows wild about our salt marshes, and in several parts about the sea-coasts.—In taste and smell, it is weaker and less unpleasant than the common wormwood. The virtues of both are supposed to be of the same kind, and to differ only in degree.

The tops enter three of our distilled waters, and give name to a conserve [L.] They are an ingredient also in the common fomentation and green oil [L.]

ABSINTHII ROMANI *folia*: *Absinthii Pontici tenuifolii incani* C. B. *Artemisia Pontica* Lin. Roman wormwood; the leaves and tops [E.]

This species is very different in appearance from the two foregoing: it is in all its parts smaller than either; the leaves are divided into fine filaments, and hoary on the lower side; the stalks, either entirely or in part, of a purplish hue. It is a native of the warmer countries, and at present difficult-

ly procurable in this, though as hardy and as easily raised as any of the other sorts. Sea wormwood has long supplied its place in the markets, and been in general mistaken for it.

Roman wormwood is less ungrateful than either of the others: its smell is tolerably pleasant: the taste, though manifestly bitter, scarce disagreeable. It appears to be the most eligible of the three as a stomachic; and is likewise recommended by some in dropfies.

ACACIA [L.]: the inspissated juice of the unripe fruit of a large prickly tree called by Caspar Bauhine, *Acacia foliis scorpioidis leguminosæ*. *Mimosa nilotica* Lin.

This juice is brought to us from Egypt, in roundish masses, wrapt up in thin bladders. It is outwardly of a deep brown colour, inclining to black; inwardly of a reddish or yellowish brown; of a firm consistence, but not very dry. It soon softens in the mouth, and discovers a rough, not disagreeable taste, which is followed by a sweetish relish. This inspissated juice entirely dissolves in watery liquors; but is scarce sensibly acted on by rectified spirit.

Acacia is a mild astringent medicine. The Egyptians give it in spitting of blood, in the quantity of a dram, dissolved in any convenient liquor; and repeat this dose occasionally: they likewise employ it in collyria for strengthening the eyes, and in gargarisms for quinsies. Among us, it is little otherwise used than as an ingredient in mithridate and theriaca [L.], and is rarely met with in the shops. What is usually sold for the Egyptian acacia, is the inspissated juice of unripe flos: this is harder, heavier, of a darker colour, and some-

what sharper taste, than the true sort.

ACANTHI *folia: Acanthisativæ vel mollis Virgilii* C. B. *Acanthis mollis* Lin. Brankursine; the leaves.

This is a beautiful plant, growing naturally in Italy and other warm climates: from its leaves, the ancients took the patterns of their foliage works. All the parts of it have a soft sweetish taste, and abound with a mucilaginous juice: its virtues do not seem to differ from those of althæa and other mucilaginous plants.

ACETOSÆ *vulgaris, five oxalidis, folia & radix: Rumicis acetosæ* Lin. *Acetosæ arvensis* C. B. *Oxalidis vulgaris folio longo* J. B. *Rumicis acetosellæ* Lin. Common sorrel; the roots and leaves [E.]

Sorrel grows wild in fields and meadows throughout England. The leaves have a restraining acid taste, without any smell or particular flavour: their medical effects are, to cool, quench thirst, and promote the urinary discharge: a decoction of them in whey affords an useful and agreeable drink in febrile or inflammatory disorders: and is recommended by Boerhaave to be used in the spring as one of the most efficacious aperients and detergents. Some kinds of scurvy have yielded to the continued use of this medicine: the Greenlanders, who are very subject to this distemper, are said to employ, with good success, a mixture of the juices of sorrel and of scurvygrass.

The roots of sorrel have a bitterish austere taste, without any acidity: they are said to be deobstruent and diuretic; and have sometimes had a place in aperient apozems, to which they impart a reddish colour.

The seeds of this plant were formerly used in diarrhoeas and dysenteries; but have long been strangers to the shops, and are now justly expunged both from the London and Edinburgh pharmacopœias: they have no remarkable smell, and scarcely any taste.

ACETOSELLA [*E.*]; vide **LUJULA**.

ACETUM [*L. E.*] Vinegar: an acid produced from fermented vinous liquors by a second fermentation.

Wine vinegar is considerably purer than that prepared from malt liquors; the latter, however acid and fine, contains a large portion of a viscous mucilaginous substance; as is evident from the ropyness and slimyness which this kind of vinegar is very much subject to; the stronger and more spirituous the wine, the better and stronger vinegar it yields. The French vinegars are said by Geoffroy to saturate above one thirty-fifth their weight of fixed alkaline salt, and some of them no less than one-twelfth; the best of the German vinegars little more than one-fortieth.

Vinegar is a medicine of excellent use in all kinds of inflammatory and putrid disorders, either internal or external: in ardent, bilious fevers, pestilential and other malignant distempers, it is recommended by Boerhaave as one of the most certain sudorifics. Weakness, fainting, vomiting, hiccup, hysterical and hypochondriacal complaints, have been frequently relieved by vinegar applied to the mouth and nose, or received into the stomach. 'It has been used internally in rabies canina.'

ACIDUM VITRIOLICUM.

Vitriolic acid [*E.*]

'This is inserted in the *Materia Medica* on account of its being generally made, not by the apothecary, but by the trading chemist, and most commonly from sulphur. The operation is said to be performed in leaden vessels, sometimes 20 feet high and 10 broad; with an eighth part of nitre to supply the absence of the external air, and some water to condense the steams. It is concentrated and considerably purified by evaporation. It is then colourless, without smell, extremely corrosive, very fixed, the most ponderous of all unmetallic fluids, powerfully attractive of water from the air, and in uniting with water produces a great degree of heat. It possesses the general properties of acids in an eminent degree.

'On account of its fluidity, it is not used as a corrosive. Blended with unctuous matter in the proportion of one to eight, it is applied in itch and other chronic eruptions, and likewise as a rubefacient in local palsy and rheumatism. Diluted with water, it shows considerable action on the human calculus out of the body; and therefore has been proposed internally in that disease, particularly where the operation is improper. As checking fermentation, as well as being astringent and tonic, it is much used in morbid acidity, relaxation, and weakness of the stomach. Its effects are propagated over the system, and hence its established use in passive hæmorrhagies, gleet, and fevers of the typhous kind. It is also used internally in itch and other chronic eruptions; and when given to nurses having the itch, it is said to cure both themselves and their children. For further particulars, see Part I. and III.

ACONITI folia: *Aconiti napelli*

pellis Lin. [L.] Blue Wolfsbane; the leaves.

This is a perennial plant, growing naturally in various mountainous parts of Europe. The juice has a disagreeable smell and an acrid taste, becoming less acrid on inspissation. It is a very active poison, was introduced by Dr. Stork, and recommended by him and others in glandular swellings, venereal nodes, anchylosis, spina ventosa, itch, amaurosis, gouty and rheumatic pains, intermittent fevers, and convulsive disorders. Stork's formula was two grains of the inspissated juice rubbed down with two drams of sugar. He began with ten grains of this powder night and morning, and increased it gradually to six grains of the inspissated juice twice a day. Others have used a tincture of one part of the dry leaf, and six parts of spirit of wine, in the dose of forty drops. From Stork's representation of the figure and taste of the plant, some are of opinion that he made his experiments with the *aconitum cammarum* Lin.

ACORUS, vide CALAMUS AROMATICUS.

ADIANTHI VERI, *seu capilli Veneris*, folia: *Adiantum folio coriandri* C. B.: *Adiantum capilli Veneris* Lin. True maidenhair; the leaves.

This is a low evergreen herb, and one of those which, from the slenderness of their stalk, are called capillary. It is a native of Italy and the southern parts of France; from whence the leaves are sometimes brought to us. These have an agreeable, but very weak, smell; and a mucilaginous somewhat roughish taste, which they readily impart to boiling water.

Maidenhair has been greatly celebrated in disorders of the breast, proceeding from a thinness and acri-

mony of the juices; and likewise for opening obstructions of the viscera, and promoting the expectoration of tough phlegm. But modern practice pays little regard to it; nor is it often to be met with in the shops; the *TRICHOMANES*, or *English maidenhair*, which is of the same quality, generally supplying its place.

ÆRUGO [L. E.] Verdegriis. This is a preparation of copper, made chiefly at Montpellier in France, by stratifying copperplates with grape stalks that have been impregnated with a fermented vegetable acid: in a few days, the plates are found covered with a pale green downy matter, which is scraped off from the copper, and the process again repeated.

Verdegriis, as it comes to us, is generally mingled with stalks of the grape; they may be separated, in pulverization, by discontinuing the operation as soon as what remains seems to be almost entirely composed of them.

Verdegriis is rarely or never used internally. Some writers greatly extol it as an emetic, and say, that a grain or two being taken acts as soon as received into the stomach; but its use has been too often followed by dangerous consequences. (See the article *CUPRUM*.)—Verdegriis applied externally, proves a gentle detergent and escharotic, and serves to take down fungous flesh arising in wounds. In these intentions, it is an ingredient in the *mel ægyptiacum*, *unguentum basilicum viride* [L.], and *ung. ex æruginis* [E.].

AGALLOCHUM, *seu lignum aloes*. Aloes wood.

There have been different conjectures concerning this wood, but no satisfactory account of it has hitherto appeared. Authors distinguish

several sorts of agallochum, most of which are strangers to Europe. That which comes to us is in little hard ponderous pieces, of a yellowish-brown colour, with several black or purplish veins. It has a bitterish aromatic taste; and a fragrant smell, especially if reduced to powder, or set on fire. Distilled with water, it affords a very fragrant essential oil, but in small quantity: digested in rectified spirit, it yields an elegant tincture, which loses nothing valuable in being evaporated to the consistence of an extract.

Agallochum is at present of very little use in medicine, and rarely to be met with in the shops: if it could be easily procured, at least the better sort of it bids fair to be a very useful cordial; Hoffman greatly recommends, in this intention, the distilled oil and spirituous tincture, and esteems a mixture of this last with tincture of steel an excellent corroborant.

AGARICUS: *Agaricus sine fungus laricis C. B.* Agaric; a fungus growing on old large trees [L.]

This fungus is an irregular spongy substance, extremely light, and of an uniform snowy whiteness (except the cortical part, which is usually taken off before the agaric is brought into the shops). It cuts freely with a knife, without discovering any hardness or grittiness, and readily crumbles betwixt the fingers into a powder. It has no remarkable smell; its taste is at first sweetish; but on chewing for a little while, proves acrid, bitter, and nauseous.

Agaric was formerly in great esteem as a cathartic, but the present practice has almost entirely rejected its use. It operates exceedingly slowly, insomuch that some have denied it to have any purgative

virtue at all. Given in substance, it almost always occasions a nausea, not unfrequently vomiting, and sometimes excessive tormina of the bowels; these effects are attributed to its light farinaceous matter adhering to the coats of the intestines, and producing a constant irritation. The best preparation of agaric seems to be an extract made with water, in which fixt alkaline salt has been dissolved; or with vinegar or wine; the first is said by Boulduc, and the two latter by Neumann, to prove effectual and safe purgatives. Nevertheless, this is at best a precarious medicine, which we stand in no manner of need of; hence the college have justly rejected it from all the compositions which it formerly had a place in, except the mithridate and theriaca [L.]

AGARICUS *pedis equini facie Turpn. Boletus igniarius Lin.* Female agaric, or agaric of the oak, called, from its being very easily inflammable, Touchwood, or Spunk [E]

This fungus is frequently met with, on different kinds of trees, in England; and is said to have been sometimes brought into the shops mixt with the true agaric of the larch: from this it is easily distinguishable by its greater weight, dusky colour, and mucilaginous taste void of bitterness. The medullary part of this fungus, beaten soft, and applied externally, has been of late greatly celebrated as a styptic; and said to restrain not only venal but arterial hæmorrhagies, without the use of ligatures. It does not appear, however, to have any real styptic power, or to act any otherwise than dry lint, sponge, or other soft fungous applications.

AGERATI *folia et flores: Agerati foliis serratis C. B. Ptarmica lutea*

lutea suaveolentis Tourn. *Achilleæ* *agerati* Lin. Maudlin; the leaves and flowers.

This is a slender plant, clothed all over with narrow serrated leaves. It is a native of Italy and other warm countries; with us, it is raised in gardens, and flowers in July and August.

Maudlin has a light agreeable smell; and a roughish, somewhat warm and bitterish taste. These qualities point out its use as a mild corroborant; but it has long been a stranger to practice, and is now omitted both by the London and Edinburgh colleges.

AGNICASTI *semen: Agni folio non serrato* J. B. *Viticis agnicasti* Lin. The chaste tree; its seeds.

This is a small tree, or rather shrub, growing spontaneously in Italy, &c. and raised with us in gardens. Its fruit, which is about the size of a pepper-corn, contains four longish seeds, which are said to be of an aromatic smell, and an acrid bitterish taste, but which are found on examination to be almost inodorous and insipid. These seeds have been celebrated as antiphrodisiacs; but experience does not warrant their having any such virtues.

AGRIMONIÆ *folia: Eupatorii veterum seu agrimonie* C. B. *Agrimonia eupatoria* Lin. Agrimony; the leaves.

This is a common plant in hedges and the borders of fields. The leaves have an herbaceous, somewhat acrid, roughish taste, accompanied with an aromatic flavour. Agrimony is said to be aperient, detergent, and to strengthen the tone of the viscera: hence it is recommended in scorbutic disorders, in debility and laxity of the intestines, &c. Digested in whey, it affords an useful diet-drink

for the spring season, not ungrateful to the palate or stomach.

ALCANNA, vide **ANCHUSA**.

ALCÆÆ *folia: Alceæ vulgaris majoris* C. B. *Malvæ verbenacæ* Ger. Vervain mallow; the leaves.

This is easily distinguishable from the common and marshmallow, by its leaves being jagged or cut in about the edges. It grows in hedges, and flowers greatest part of the summer. *Alcea* agrees in quality with the **ALTHÆA** and **MALVA VULGARIS**; but appears to be less mucilaginous than either.

ALCHEMILLÆ *folia: Alchemille vulgaris* C. B. & Lin. Ladies mantle; the leaves.

This grows wild in many parts of England, but is rarely met with about London: the leaves seem as if plaited or folded together, so as to have given occasion to the English name of the plant. The leaves of alchemilla discover to the taste a moderate astringency, and were formerly much esteemed in some female weaknesses and in fluxes of the belly. They are now rarely made use of; though both the leaves and roots might doubtless be of service in cases where mild astringents are required.

ALCIS UNGULA: Elks hoof. The elk is a large animal of the stag kind, met with in Muscovy and other cold countries. The hoof of one of the hinder feet has been celebrated against epilepsies, from a ridiculous opinion, that the elk is himself subject to disorders of this kind, and prevents or removes them by scratching his ear with his hoof.

ALKEKENGİ *seu balicacabi fructus: Solani vesicarii* C. B. *Physalidis alkekengi* Lin. Winter-cherry; the fruit.

This is a low, branched shrub, bearing leaves like those of nightshade; with white flowers, which stand single at the joints. The flower-cup changes into a membranous cover, which at length bursts and discovers a fruit of a fine red colour, about the size of a common cherry. The fruit ripens in October, and continues frequently to the middle of December. This plant grows wild in some parts of France, Germany, &c. the beauty and lateness of its fruit have gained it a place in our gardens.

Winter-cherries are said by most writers to be extremely bitter; but, as Haller justly observes, the cherry itself, if carefully freed from the cover (which is very bitter and pungent) has merely a subacid taste. They stand highly recommended as detergent, aperient, diuretic, and for expelling gravel; four, five, or more of the cherries are directed for a dose, or an ounce of the expressed juice. Mr Ray tells us of a gouty person who was cured and kept free from returns of his disorder, by taking eight of these cherries at each change of the moon; these occasioned a copious discharge of extremely fetid urine.

ALLIARIÆ folia: *Hesperidis allium redolentis* Tourn. *Erysimi alliariæ* Lin. Sauce-alone, or jack-by-the-hedge; the leaves.

This is common in hedges and shady waste places, flowering in May and June. The leaves have a bit-terish acid taste; and, when rubbed betwixt the fingers, a strong smell, approaching to that of garlick. They are recommended internally as sudorifics and deobstruents, somewhat of the nature of garlick, but much milder; and externally as antiseptics in gangrenes and cancerous ulcers. Hildanus used to gather the herb for these last purposes in the

spring, and expose it for a day to the action of a dry air in a shady place; being then committed to the press, it yielded a juice possessing the smell and taste of the alliaria: this, he informs us, with a little oil on the surface, keeps in perfection for years; whereas the herb in substance soon loses its virtue in keeping.

ALLII radix: *Allii sativi* C. B. & Lin. Garlick; the roots [*L. E.*]

These roots are of the bulbous kind, of an irregularly roundish shape, with several fibres at the bottom; each root is composed of a number of lesser bulbs, called cloves of garlick, inclosed in one common membranous coat, and easily separable from one another. All the parts of this plant, but more especially the roots, have a strong offensive smell, and an acrimonious almost caustic taste. The root applied to the skin inflames, and often ulcerates the part. Its smell is extremely penetrating and diffusive; when the root is applied to the feet, its scent is soon discoverable in the breath; and when taken internally, its smell is communicated to the urine, or the matter of an issue, and perspires through the pores of the skin.

This pungent root warms and stimulates the solids, and attenuates tenacious juices. Hence in cold leucophlegmatic habits, it proves a powerful expectorant, diuretic, and emmenagogue; and, if the patient is kept warm, sudorific. In humoral asthma, and catarrhus disorders of the breast, in some scurvies, flatulent colics, hysterical and other diseases proceeding from laxity of the solids and cold sluggish indispo-sition of the fluids, it has generally good effects: it has likewise been found serviceable in some hydropic cases. Sydenham relates, that he has known the dropsy cured by the use

use of garlick alone; he recommends it chiefly as a warm strengthening medicine in the beginning of the disease.

The liberal use of garlick is apt to occasion headaches, flatulencies, thirst, febrile heats, inflammatory distempers, and sometimes discharges of blood from the hæmorrhoidal vessels. In hot bilious constitutions, where there is already a degree of irritation; where the juices are too thin and acrimonious, or the viscera unsound; this stimulating medicine is manifestly improper, and never fails to aggravate the distemper.

The most commodious form for the taking of garlick, a medicine to most people not a little unpleasant, is that of a bolus or pill. Infusions in spirit, wine, vinegar, and water, although containing the whole of its virtues, are so acrimonious, as to be unfit for general use. A syrup and oxymel of it are kept in the shops.

Garlick made into an unguent with oils, &c. and applied externally, is said to resolve and discuss cold tumours, and has been by some greatly esteemed in cutaneous diseases. It has likewise sometimes been employed as a repellent. Sydenham assures us, that among all the substances which occasion a derivation or revulsion from the head, none operate more powerfully than garlick applied to the soles of the feet: hence he was led to make use of it in the confluent small pox; about the eighth day after the face began to swell, the root cut in pieces, and tied in a linen cloth, was applied to the soles, and renewed once a-day till all danger was over.

ALNI VULGARIS folia & cortex: *Alni rotundifolia glutinose viridis* C. B. *Betula alni* Lin. The leaves and bark of the alder tree. These have a bitter styptic disagreeable taste. The bark is re-

commended by some in intermittent fevers; and a decoction of it, in gargarisms, for inflammations of the tonsils.

ALNI NIGRÆ seu *frangulae* cortex: *Alni nigra baccifera* J. B. *Rhamni frangulae* Lin. The black or berry-bearing alder; its bark.

This tree is common in moist woods in divers parts of England. The internal bark of the trunk or root of the tree, given to the quantity of a dram, purges violently, occasioning gripes, nausea, and vomiting. These may be in good measure prevented by the addition of aromatics; but as we have plenty of safer and less precarious purgatives, practitioners have deservedly rejected this.

ALOE. Aloe is the inspissated juice of certain plants of the same name. The ancients distinguished two sorts of aloes: the one was pure and of a yellowish colour inclining to a red, resembling the colour of a liver, and thence named hepatic; the other was full of impurities, and hence supposed to be only the dross of the better kind. At present, various sorts are met with in the shops; which are distinguished either from the places, from the species of the plants, or from some differences in the juices themselves. These may be all ranged in three classes.

(1) **ALOE SOCOTORINA** [L. B.] Socotorine aloes, brought from the island Socotora in the Indian ocean, wrapt in skins; it is obtained from the *aloe Socotorina cuneifolia spinosa, flore purpurea* Breyn. & *Commelin.* Variety 2 of *aloe persoliata* Lin. This sort is the purest of the three: it is of a glossy surface, clear, and in some degree pellucid; in the lump, of a yellowish red colour, with a purple cast; when reduced

to powder, of a bright golden colour. It is hard and friable in the winter, somewhat pliable in summer, and grows soft betwixt the fingers. Its taste is bitter, accompanied with an aromatic flavour, but insufficient to prevent its being disagreeable; the smell is not very unpleasant, and somewhat resembles that of myrrh.

(2) *ALOE HEPATICA* [E.] Hepatic, Barbadoes, or common Aloes; the juice of the *Aloe C. B.* *Aloe vera vulgaris* Munting. *Aloe perfoliata* Lin. Hepatic aloes is not so clear and bright as the foregoing sort: it is also of a darker colour, more compact texture, and for the most part drier. Its smell is much stronger and more disagreeable: the taste intensely bitter and nauseous, with little or nothing of the fine aromatic flavour of the Socotorine.—The best hepatic aloes comes from Barbadoes in large gourd shells; an inferior sort of it (which is generally soft and clammy) is brought over in casks.

(3) *ALOE CABALLINA*. Fetid, caballine, or horse aloes; the produce of the *aloe Guineensis caballina vulgari similis sed tota maculata Commelin*.—This sort is easily distinguished from both the foregoing, by its strong rank smell; although, in other respects, it agrees pretty much with the hepatic, and is not unfrequently sold in its stead. Sometimes the caballine aloes is prepared so pure and bright, as not to be distinguishable by the eye even from the Socotorine; but its offensive smell, which it cannot be divested of, readily betrays it.

All the sorts of aloes dissolve in pure spirit, proof spirit, and proof spirit diluted with half its weight of water; the impurities only being left. They dissolve also by the assist-

ance of heat in water alone; but as the liquor grows cold, the resinous part subsides, the gummy remaining united with the water. The hepatic aloes is found to contain more resin and less gum than the Socotorine, and this than the caballine. The resins of all the sorts, purified by spirit of wine, have little smell: that obtained from the Socotorine has scarce any perceptible taste; that of the hepatic, a slight bitterish relish; and the resin of the caballine, a little more of the aloetic flavour. The gummy extracts of all the sorts are less disagreeable than the crude aloes: the extract of Socotorine aloes has very little smell, and is in taste not unpleasant; that of the hepatic has a somewhat stronger smell, but is rather more agreeable in taste than the extract of the Socotorine: the gum of the caballine retains a considerable share of the peculiar rank smell of this sort of aloes, but its taste is not much more unpleasant than that of the extracts made from the two other sorts.

Aloes is a stimulating cathartic bitter: if given in so large a dose as to purge effectually, it often occasions an irritation about the anus, and sometimes a discharge of blood. Small doses of it frequently repeated, not only cleanse the primæ viæ, but likewise attenuate and dissolve viscid juices in the remoter parts, warm the habit, quicken the circulation, and promote the uterine and hemorrhoidal fluxes. This medicine is particularly serviceable in habitual costiveness, to persons of a phlegmatic temperament and sedentary life, and where the stomach is oppressed and weakened: in dry bilious habits, aloes prove injurious, immoderately heating the blood, and inflaming the bowels.

The juice is likewise, on account of its bitterness, supposed to kill worms,

worms, either taken internally, or applied in plasters to the umbilical region. It is also celebrated for restraining external hemorrhagies, and cleansing and healing wounds and ulcers.

The ancients gave aloes in much larger doses than is customary at present. Dioscorides orders half a dram or a dram for gently loosening the belly; and three drams when intended to have the full effect of a cathartic. But modern practice rarely exceeds a scruple, and limits the greatest dose to two scruples. For the common purposes of this medicine, ten or twelve grains suffice: taken in these or less quantities, it acts as a gentle stimulating ecoprotic, capable of removing, if duly continued, very obstinate obstructions.

Some are of opinion, that the purgative virtue of aloes resides entirely in its resin: but experience has shown, that the pure resin has little or no purgative quality; and that the gummy part separated from the resinous, acts more powerfully than the crude aloes. If the aloes indeed be made to undergo long coction in the preparation of the gummy extract, its cathartic power will be considerably lessened, not from the separation of the resin, but from an alteration made in the juice itself by the heat. The strongest vegetable cathartics become mild by a like treatment, without any remarkable separation of their parts.

Socotorine aloes, as already observed, contains more gummy matter than the hepatic; and hence it is likewise found to purge more, and with greater irritation. The first sort, therefore, is most proper where a stimulus is required, as for promoting or exciting the menstrual flux; whilst the latter is better calculated to act as a common purge. It is supposed that the vulnerary and bal-

famic virtues of this juice reside chiefly in the resin; and hence that the hepatic aloes, which is most resinous, is most serviceable in external application.

The Edinburgh college directs the hepatic aloes in the *balsamum traumaticum*, designed for external use; and the Socotorine in those preparations or compositions which are to be taken internally, as the *tingtura sacra*, *elixir sacrum*, *pilula aloetica*, *pilula Rufi*, *pilula stomachica*, *pilula coccia*, &c.

The London college uses the Socotorine only. In the *vinum aloeticum*, *tingtura sacra*, *elixir aloes*, *balsamum traumaticum*, *pilula aromatica*, and the other pills wherein aloes is an ingredient, the Socotorine kind in substance is directed. In the powder of *hiera picra*, only the pure gummy part of the Socotorine aloes is employed, the separation of which from the resinous matter is given in a distinct process.

ALSINES folia: *Alfines vulgaris* five *morsus gallinae* J. B. *Alfines media* Lin. Chickweed; the leaves.

This plant was employed by the ancients externally against erysipellatous, and other inflammatory disorders. Later times have given it internally in hæmoptoes, as a restorative in atrophies and consumptions, and likewise as an antiepileptic. Some recommend for these purposes the expressed juice, to be taken to the quantity of an ounce; others the dried leaves, in the dose of a dram; and others, a water distilled from them. But if any real benefit is expected from *alfine*, it ought to be used liberally as food; though even then, its effects would not perhaps be superior to those of more approved culinary herbs.

ALTHÆÆ folia, radix: *Althæa Dioscoridis* & *Plinii* C. B. *Althæa*

Althæa officin. Lin. Marsh-mallows; the leaves and root [*L. E.*]

This plant grows wild in marshes, and other moist places, in several parts of England; though frequently cultivated for medicinal use in gardens. All the parts of it have a slimy taste, and abound with a soft mucilaginous substance, which is readily extracted by water; the mucilage of the roots appears to be the strongest, and hence this part is generally made use of in preference to the others.

This plant has the general virtues of an emollient medicine; and proves serviceable in a thin acrimonious state of the juices, and where the natural mucus of the intestines is abraded. It is chiefly recommended in sharp defluxions upon the lungs, hoarseness, dysenteries, and likewise in nephritic and calculous complaints; not, as some have supposed, that this medicine has any peculiar power of dissolving or expelling the calculus; but as, by lubricating and relaxing the vessels, it procures a more free and easy passage. *Althæa* root is sometimes employed externally for softening and maturing hard tumors: chewed, it is said to give ease in difficult dentition of children.

This root gives name to an official *syrup* [*L. E.*] *decoction* [*E.*] and *ointment* [*L.*] and is likewise an ingredient in the *compound powder of gum tragacanth* and the *oil and plaster of mucilages* [*L.*] though it does not appear to communicate any particular virtue to the two last, its mucilaginous matter not being dissoluble in oils.

ALUMEN [*L. E.*] Alum.

Alum is a salt artificially produced from certain minerals, by calcining and exposing them to the air; after which the alum is elixated by

means of water. The largest quantities are prepared in England, Germany, and Italy.

This salt is of a white or pale red colour, of an austere styptic taste, accompanied with a nauseous sweetness. It dissolves in about twelve times its weight of water; and concretes again, upon duly evaporating the solution, into semitransparent crystals, of an octagonal figure. Exposed to the fire, it easily melts, bubbles up in blisters, emits a copious phlegm, and then turns into a light spongy white mass, considerably more acrid than the alum was at first: this urged with a stronger fire, yields a small quantity of acid spirit, similar to that obtained by the same means from vitriol; the part which remains, if the heat has been sufficiently intense and long continued, is an insipid white earth, readily soluble in every kind of acid.

Solutions of alum coagulate milk, change the blue colour of vegetable juices into a red or purple, and turn an infusion of galls turbid and whitish. Upon adding fixt alkaline salts to these solutions, the earth of the alum is precipitated, its acid uniting with the alkali into a neutral saline concrete similar to vitriolated tartar.

Alum is a powerful astringent: it is reckoned particularly serviceable for restraining hæmorrhagies, and immoderate secretions from the blood; but less proper in intestinal fluxes. In violent hæmorrhagies, it may be given in doses of fifteen or twenty grains, and repeated every hour or half hour till the bleeding abates: in other cases, smaller doses are more adviseable; large ones being apt to nauseate the stomach, and occasion violent constipations of the bowels. It is used also externally, in astringent and repellent lo-
tions

tions and collyria. 'Burnt alum has been used in scruple doses as a laxative in colic.'

Its officinal preparations are, for internal use, the *serum aluminosum* [L.] and *pulvis stypticus, aqua styptica* [E.] for external applications, the *aqua aluminosa, coagulum aluminosum* [L.] and *alumen ussum* [L.E.] which last is no other than the alum dried by fire, or freed from the watery moisture, which, like other salts, it always retains in its crystalline form. By this loss of its water it becomes sharper, so as to act as a slight escharotic. It is employed also as an ingredient in the *lapis medicamentosus* and the *aqua vitriolica* [L.]

AMARACUS, vide MAJORANA.

AMBRAGRISEA.

Ambergris is a bituminous substance of a greyish or ash colour, intermingled with yellowish and blackish specks or veins: it is usually met with in little opaque rugged masses, very light, of a loose texture, friable in a certain degree like wax; they break rough and uneven, and not unfrequently contain pieces of shells, bones of fishes, and other like matters. This concrete is found floating on the surface of the sea, or thrown out upon the shores; the greatest quantities are met with in the Indian ocean; pieces have likewise been now and then discovered in our own and other northern seas. 'Dr Schwediauer supposes it to be an animal product, from its being so frequently found in the belly of the *physeter macrocephalus* Lin.'

Pure ambergris softens betwixt the fingers; melts in a small degree of heat into the appearance of oil, and in a stronger heat proves almost totally volatile. Warmed a little, it emits a peculiar fragrant smell; set

on fire, it smells like burning amber. It dissolves, though difficultly, in spirit of wine, and essential oils; but not in expressed oils or in water.

Ambergris is in general the most agreeable of the perfumes, and rarely accompanied with the inconveniences which other substances of this class frequently occasion. It is looked upon as an high cordial, and esteemed of great service in all disorders of the head, and in nervous complaints; a solution of it in a spirit distilled from roses, stands recommended by Hoffman as one of the most efficacious corroborants of the nervous system. The Orientals entertain an high opinion of the aphrodisiac virtues of this concrete; and likewise suppose that the frequent use of it conduces to long life.

AMMEOS VERI *semen: Ammeos odore origani* J. B. *Sisonis ammeos* Lin. The seeds of the true ammi or bishopsweed, brought from Egypt.

These are small striated seeds, of a reddish brown colour, a warm pungent taste, and a pleasant smell approaching to that of origanum. They are recommended as stomachic, carminative, and diuretic; but have long been strangers to the shops: their place has been generally supplied by the seeds of a plant common in our own country, though not a native of it, viz.

AMMEOS VULGARIS *semen: Ammeos vulgaris majoris, latioribus foliis, semine minus odorato* J. B. *Ammeos majoris* Lin. Common bishopsweed seeds [L.]

The seeds of common bishopsweed are somewhat larger and paler coloured than the foregoing: their smell and taste is weaker, and without any thing of the origanum flavour of the true ammi. They are ranked among the four lesser hot seeds

seeds, but are scarce otherwise made use of than as an ingredient in the theriaca.

AMMONIACUM GUMMI

[L. E.] Ammoniacum is a concrete gummy resinous juice, brought from the East Indies; usually in large masses, composed of little lumps or tears, of a milky colour, but soon changing, upon being exposed to the air, of a yellowish hue. We have no certain account of the plant which affords this juice; the seeds usually found among the tears resemble those of the umbelliferous class. Such tears as are large, dry, free from little stones, seeds, or other impurities, should be picked out and preferred for internal use; the coarser kind is purified by solution and colature, and then carefully inspissating it; unless this be artfully managed, the gum will lose a considerable deal of its more volatile parts. There is often vended in the shops, under the name of strained gum ammoniacum, a composition of ingredients much inferior in virtue.

Ammoniacum has a nauseous sweet taste, followed by a bitter one; and a peculiar smell, somewhat like that of galbanum, but more grateful: it softens in the mouth, and grows of a white colour upon being chewed. Thrown upon live coals, it burns away in flame: it is in some measure soluble in water and in vinegar, with which it assumes the appearance of milk; but the resinous part, amounting to about one half, subsides on standing.

Ammoniacum is an useful deobstruent; and frequently prescribed for opening obstructions of the abdominal viscera, and in hysterical disorders occasioned by a deficiency of the menstrual evacuations. It is likewise supposed to deterge the

pulmonary vessels; and proves of considerable service in some kinds of asthma, where the lungs are oppressed by viscid phlegm: in this intention, a solution of gum ammoniacum in vinegar of squills proves a medicine of great efficacy, though not a little unpleasant. In long and obstinate colics proceeding from viscid matter lodged in the intestines, this gummy-resin has produced happy effects, after purges and the common carminatives had been used in vain. Ammoniacum is most commodiously taken in the form of pills: about a scruple may be given every night, or oftener. Externally, it softens and ripens hard tumours: a solution of it in vinegar stands recommended by some for resolving even scirrhus swellings. A plaster made of it and squill-vinegar, is recommended by some in white swellings. A dilute mixture of the same is likewise rubbed on the parts, which are also fumigated with the smoke of juniper-berries.

In the shops is prepared a solution of it in pennyroyal water, called, from its milky colour, *lac ammoniaci* [L]. It is an ingredient also in the *pil. scillit.* [E.]

AMOMI VERI *semen*: *Amomi racemosi* C. B. The seeds of the true amomum brought from the East Indies [L.]

The true amomum is a round fruit, about the size of a middling grape; containing, under a membranous cover, a number of small, rough, angular seeds, of a blackish brown colour on the outside, and whitish within: the seeds are lodged in three distinct cells; those in each cell are joined closely together, so as that the fruit, upon being opened, appears to contain only three seeds. Ten or twelve of these fruits grow together in a cluster, and

and adhere, without any pedicle, to a woody stalk about an inch long; each single fruit is surrounded by six leaves, in form of a cup; and the part of the stalk void of fruit is clothed with leafy scales.

The husks, leaves, and stems, have a light grateful smell, and a moderately warm aromatic taste: the seeds freed from the husks, are in both respects much stronger; their smell is quick and penetrating, their taste pungent, approaching to that of camphor. Notwithstanding, amomum is an elegant aromatic, it has long been a stranger to the shops.

It is directed as an ingredient in the theriaca. The college of Edinburgh has expunged that composition; and as the true amomum is not at present to be procured in this country, they have dropped its name: that of London allows the seeds of the following plant of our own growth to be substituted to those of the oriental amomum.

AMOMI VULGARIS *semen*: *Sisonis quod amomum officinis nostris C. B. Sii aromatici Tourn. Sisonis amomi Lin.* The seeds of the common amomum, or bastard stone-parsley [L.]

These are very different in their appearance and manner of growth from the foregoing: they stand in form of umbels, and are joined two together without any common covering: they are small, striated, of an oval figure and brown colour. Their taste is warm and aromatic; but considerably different from that of the amomum verum, and very far weaker. Water extracts little of their flavour by infusion, but elevates the whole in distillation; rectified spirit extracts the whole, but elevates very little: hence the watery extract has no taste or smell of the seeds; whilst the spirituous pos-

sesses their flavour in great perfection. It is observable, that the tincture drawn from them with pure spirit is of a green colour. These seeds have been recommended as carminative, aperient, diuretic, and emmenagogue; but they are at present little regarded in practice.

AMYGDALÆ AMARÆ et **DULCES**: *Nuclei fructus Amygdali amaræ Tournf. amygdali communis var. γ Lin. et Amygdali sativæ Bauh. amygdali communis var. β Lin.* Sweet and bitter almonds [L. E.]

The almond is a flattish kernel, of a white colour, covered with a thin brownish skin; of a soft sweet taste, or a disagreeable bitter one. The skins of both sorts are unpleasant, and covered with an acrid powdery substance: they are very apt to become rancid on keeping, and to be preyed on by a kind of insect, which eats out the internal part, leaving the almond to appearance entire. To these circumstances regard ought to be had in the choice of them.

The fruit which affords these kernels, is the produce of a tree greatly resembling the peach. The eye distinguishes no difference betwixt the trees which produce the sweet and bitter, or betwixt the kernels themselves; it is said that the same tree has, by a difference in culture, afforded both.

Both sorts of almonds yield on expression, a large quantity of oil, which has no smell or any particular taste: this oil separates likewise upon boiling the almonds in water, and is gradually collected on the surface: but on triturating the almonds with water, the oil and water unite together, by the mediation of the other matter of the kernel, and form an unctuous milky liquor.

Sweet

Sweet almonds are of greater use in food than as medicines: but they are reckoned to afford little nourishment; and when eaten in substance, are not easy of digestion, unless thoroughly comminuted. They are supposed, on account of their soft unctuous quality, to obtund acrimonious juices in the primæ viz: peeled sweet almonds, eaten six or eight at a time, sometimes give present relief in the heartburn.

Bitter almonds have been found poisonous to dogs and sundry other animals; and a water distilled from them, when made of a certain degree of strength, has had like effects. Nevertheless, when eaten, they appear innocent to men, and have been not unfrequently used as medicines: Boerhaave recommends them, in substance, as diuretics which heat but moderately, and which may therefore be ventured upon in acute diseases.

The oils obtained by expression from both sorts of almonds are in their sensible qualities the same. The general virtues of these oils are, to blunt acrimonious humours, and to soften and relax the solids: hence their use internally, in tickling coughs, heat of urine, pains and inflammations; and externally, in tension and rigidity of particular parts.

The milky solutions of almonds in watery liquors, commonly called emulsions, contain the oil of the subject, and participate in some degree of the emollient virtue thereof; but have this advantage above the pure oil, that they may be given in acute or inflammatory disorders, without danger of the ill effects which the oil might sometimes produce; since emulsions do not turn rancid or acrimonious by heat, as all the oils of this kind in a little time do. Several unctuous and resinous substances, of them-

selves not miscible with water, may by trituration with almonds be easily mixed with it into the form of an emulsion; and are thus excellently fitted for medicinal use. In this form, camphor and the resinous purgatives may be commodiously taken. The only officinal preparations of almonds are, the expressed oil and emulsion. 'A bitter-almond emulsion, in the quantity of a pint or two daily, is said to have been given in obstinate intermittents with success.'

ANACARDIA: *Fruſus Avicennia germinantis* Lin. Anacardium, or Malacca bean.

This is the fruit of a tree growing in Malabar and other parts of the East Indies. It is of a shining black colour, of the shape of a heart flattened, about an inch long, terminating at one end in an obtuse point, and adhering by the other to a wrinkled stalk: it contains within two shells a kernel of a sweetish taste: betwixt the shells is lodged a thick and acrid juice.

The medicinal virtues of anacardia have been greatly disputed. Many have attributed to them the faculty of comforting the brain and nerves, fortifying the memory, and quickening the intellect: and hence a confection made from them has been dignified with the title of *confectio sapientum*; others think it better deserves the name of *confectio stultorum*, and mention instances of its continued use having rendered people maniacal. But the kernel of anacardium is not different in quality from that of almonds. The ill effects attributed to this fruit belong only to the juice contained betwixt the kernels, whose acrimony is so great, that it is said to be employed by the Indians as a caustic. This juice is recommended externally for tetters, freckles, and other cutaneous

cutaneous deformities; which it removes only by exulcerating or exco-riating the part, so that a new skin comes underneath.

ANAGALLIDIS folia: *Anagallidis pharicio flore C. B. et Anagallidis flore caeruleo C. B. Anagallidis arvensis Lin.* Common male and female pimpernel; the leaves.

Pimpernel is a low plant, in appearance resembling chickweed; but easily distinguishable by its leaves being spotted underneath, and joined immediately to the stalk. The male and female pimpernels differ no otherwise than in the colour of their flowers; they are both found wild in the fields, but the male or red-flowered sort is most common. Both the pimpernels have an herbaceous roughish taste, with little or no smell. Many extraordinary virtues have been attributed to them. Geoffroy esteems them cephalic, sudorific, vulnerary, antimaniacal, antiepileptic, and alexeterial. Tragus, Caspar Hoffman, Michaeli, and others, are also very liberal in their praises; one of these gentlemen declares, that he has known numerous instances of the singular efficacy of a decoction and tincture of pimpernel, in maniacal and melancholic deliria. But later practitioners have not been so happy as to meet with the like success. Pimpernel is not unfrequently taken as food; it makes no unpleasant salad; and in some parts of this kindom, is a common pot-herb. A spirituous tincture of it contains nothing valuable; the only preparation that promises utility, is an extract made with water, or the expressed juice depurated and inspissated.

ANAGALLIS AQUATICA,
vide BECABUNGA.

ANCHUSÆ radix: *Buglossi ra-*

dice rubra Tourn. Anchuse tinctoria Lin. Alkanet root [E.]

Alkanet is a rough hairy plant, much resembling the vipers bugloss: its chief difference from the common buglosses consists in the colour of its roots; the cortical part of which is of a dusky red, and imparts an elegant, deep red to oils, wax, and all unctuous substances, but not to watery liquors. This plant is a native of the warmer parts of Europe: it is sometimes cultivated in our gardens; but the greatest quantities are raised in Germany and France, particularly about Montpellier, from whence the dried roots are usually imported to us. The alkanet root produced in England is much inferior in colour to that brought from abroad; the English being only lightly reddish, the others of a deep purplish red: this has induced some to suspect that the foreign roots owe part of their colour to art, but we think without sufficient foundation.

Alkanet root has little or no smell: when recent, it has a bitterish astringent taste; but when dried, scarce any. As to its virtues, the present practice expects not any from it. Its chief use is for colouring oils, unguents, and plasters. As the colour is confined to the cortical part, the small roots are best, these having proportionably more bark than the large.

ANETHI semen: *Anethi hortensis C. B. Anethi graveolentis Lin.* Dill seed [L. E.]

Dill is an umbelliferous plant, cultivated in gardens, as well for culinary as medical use. The seeds are of a pale yellowish colour, in shape nearly oval, convex on one side, flat on the other. Their taste is moderately warm and pungent; their smell aromatic, but not of the most agreeable kind. These seeds

are recommended as a carminative, in flatulent colics proceeding from a cold cause or a viscosity of the juices. The most efficacious preparations of them are, the distilled oil, and a tincture or extract made with rectified spirit. The oil and simple water distilled from them are kept in the shops [L.]

ANGELICÆ radix, folia, semen: *Angelica sativa* C. B. *Imperatoria sativa* Tourn. *Angelica archangelica* Lin. Garden angelica; the roots, leaves, and seeds [L. E.] *Angelica sylvestris* Lin. [E.] Wild Angelica. This is similar in its qualities, but weaker than the other.

Garden angelica is a large umbelliferous plant, growing spontaneously in the northern climates: for the use of the shops, it is cultivated in gardens, in the different parts of Europe. Bohemia and Spain are said to produce the best. The London college direct the roots brought from Spain to be alone made use of. Angelica roots are apt to grow mouldy, and be preyed upon by insects, unless thoroughly dried, kept in a dry place, and frequently aired. We apprehend that the roots which are subject to this inconvenience might be preserved, by dipping them in boiling spirit, or exposing them to its steam, after they are dried.

All the parts of angelica, especially the roots, have a fragrant aromatic smell; and a pleasant bitterish warm taste, glowing upon the lips and palate for a long time after they have been chewed. The flavour of the seeds and leaves is very perishable; particularly that of the latter, which, on being barely dried, lose greatest part of their taste and smell: the roots are more tenacious of their flavour, though even these lose part of it upon keeping. The

fresh root, wounded early in the spring, yields an odorous, yellow juice; which, slowly exsiccated, proves an elegant gummy-resin, very rich in the virtues of the angelica. On drying the root, this juice concretes into distinct molecularæ, which on cutting it longitudinally, appear distributed in little veins; in this state, they are extracted by pure spirit, but not by watery liquors.

Angelica is one of the most elegant aromatics of European growth, though little regarded in the present practice. The root, which is the most efficacious part, is used in the aromatic tincture [E.] The leaves are ingredients in the three alexeterial waters [L.]; the seeds, in the compound aniseed water [L.] The stalks make an agreeable sweetmeat.

ANGUILLÆ HEPAR. The liver of the eel.

The liver and gall of the eel are extremely acrid. They have been held a specific in difficult births; and enter the principal compositions for that intention in foreign pharmacopœias; although it appears, that, in most cases of this kind, acrid irritating medicines are really injurious. Boerhaave observes, that no fish has a more acrid gall than the eel; and says, that with pills made of the gall of the eel and pike, he has cured pale rickety children with swelled bellies; the gall powerfully promoting urine, and occasioning the belly to subside.

ANIME; a resin exuding from the trunk of a large American tree, called by Piso *jetaiba*, by the Indians *courbaril*. *Hymenæa courbaril* Lin.

This resin is of a transparent amber colour, a light agreeable smell, and little or no taste. It dissolves entirely, but not very readily, in rectified

rectified spirit of wine; the impurities, which are often in large quantity, remaining behind. The Brazilians are said to employ anise in fumigations for pains and aches proceeding from a cold cause: with us, it is rarely, if ever, made use of for any medicinal purposes.

ANISI semen: Apii anisi dicti semine suaveolente Tourn. Pimpinell anisi Lin. Anise, the seed [L. E.]

Anise is an annual umbelliferous plant, growing naturally in Crete, Syria, and other places of the East. It is cultivated in some parts of France, Germany, and Spain, and may be raised also in England: the seeds brought from Spain, which are smaller than the others, are preferred.

Aniseeds have an aromatic smell, and a pleasant warm taste, accompanied with a degree of sweetness. Water extracts very little of their flavour; rectified spirit the whole.

These seeds are in the number of the four greater hot seeds: their principal use is in cold flatulent disorders, where tenacious phlegm abounds, and in the gripes to which young children are subject. Frederick Hoffman strongly recommends them in weakness of the stomach, diarrhoeas, and for strengthening the tone of the viscera in general; and thinks they well deserve the appellation given them by Helmont, *intestinorum solamen*.

The officinal preparations of these seeds are an *essential oil* [L. E.] and a *spirituous compound water* [L.] They are ingredients in *mithridate* and *theriaca*; and the essential oil in the *paregoric elixir*. [L. E.]

ANONIS, vide ONONIS.

ANSERINA, vide ARGENTINA.

ANTIMONIUM [L. E.] *Stibium*. Antimony.

Antimony is a ponderous brittle mineral, composed of long shining streaks like needles, intermingled with a dark lead-coloured substance; of no manifest taste or smell. There are several mines of it in Germany, Hungary, and France; and some likewise in England. The English seems to be of all others the least proper for medicinal use, as frequently containing a portion of lead. The substances found mixed with the foreign sorts are generally of the unfusible stony kind, from which the antimony is melted out in vessels, whose bottom is perforated with small holes, and received in conical moulds: in these, the lighter and more drossy matter arises to the surface; whilst the more pure and ponderous subsides to the bottom: hence the upper broad part of the leaves is considerably less pure than the lower.

The goodness of antimony is judged of from its weight; from the leaves not being spongy or blebby; from the largeness of the striæ; and from the antimony totally evaporating in a strong fire.

Antimony was employed by the ancients in collyria against inflammations of the eyes; and for staining the eyebrows black. Its internal use does not seem to have been established till towards the end of the fifteenth century; and even at that time it was by many looked upon as poisonous. But experience has now fully evinced, that pure antimony, in its crude state, has no noxious quality, 'being often used, particularly in chronic eruptions;' that some of the preparations of it are medicines of great efficacy; and that though many of them are most violently emetic and cathartic, yet even these, by a slight alteration or addition, lose their virulence,

and become mild in their operation.

This mineral appears from chemical experiments to consist of a metal, united with common sulphur, and separable in its metallic form by the same means whereby other metallic bodies are extracted from their ores.

The pure metal operates, in a very minute dose, with extreme vehemence, as a purgative and emetic: when combined with sulphur, as in the crude mineral, its power is restrained: divested of the inflammable principle which it has in common with all perfectly metallic bodies, it becomes an indolent calx. See the preparations of antimony, Part III.

Dr Black's TABLE of the PREPARATIONS of ANTIMONY.

The Preparations of Antimony are obtained either from the crude antimony, or from the pure metallic part of it called regulus.

FROM CRUDE ANTIMONY.

I. By simple pulverisation.

Antimonium præparatum. Ed. et Lond.

II. by the action of heat and air.

Flores antimon. Sine addito.

Vitrum antimonii. Ed. et Lond.

Vitrum antimonii ceratum. Ed.

III. By the action of fixed alkalis.

1. Joined with it by fusion. HEPARS of antimony.

Hepar antim. mitissimus, vulgo
Regulus antim. medicinalis.

Hepar for the Kermes mineral of Geoffroy.

Hepar for the tinctura antimonii. Lond.

2. Acting upon it in the form of watery solution.

Kermes mineralis.

Sulphur antim. præcipitatum. Ed. et Lond.

Vulgo sulphur auratum antimonii.

IV. By melting or deslagrating it with nitre, which produces either *croci* or *calces* of antim.

Crocus antim. mitissimus, vulgo

Regulus antim. medicinalis.

Crocus antimonii mitior.

Crocus antimonii. Lond.

Crocus antimonii, vulgo crocus metal-
lorum. Ed.

Crocus antimonii lotus. Lond.

Antimonii emeticum mitius,
Boerh.

Calx antimonii nitrata. Ed. Vulgo
James's powder.

Calx antimonii. Lond. Vulgo antim.
diaphoreticum.

V. By the action of acids.

Antimon. vitriolatum. Klaunig.

Antimon. catharticum. Wilson.

Causticum antimoniale, vulgo Butyrum
Antim. Ed.

Causticum antimoniale. Lond.

Mercurius vitæ, sive pulvis Alga-
rotti.

Bezoardicum minerale.

Flores antim. cum sale ammoniaco.

Tartarus antimonialis, vulgo eme-
ticus. Ed. et

Tartarus emeticus. Lond.

Vinum antimoniale. Ed. et Lond.

Vinum e tartaro antimoniali. L.

FROM THE REGULUS.

This metal separated from the sulphur by different processes, is called *Regulus antimonii simplex*, *Regulus antimonii martialis*, *Regulus jovialis*, &c. From it were prepared,

I. By the action of heat and air,

Flores argentei, sive nix antim.

II. By the action of nitre,

Cerussa antimonii.

Stomachicum Poterii.

Antihæsticum Poterii.

Cardiacum Poterii.

Preparations which have their name from antimony, but scarcely contain any of its metallic part.

Cinnabaris antimonii. Lond.

Tinctura antimonii. Lond.

‘ In the various preparations of antimony, the reguline part is either combined with an acid, or in a condition to be acted upon by acid in the stomach; and the general effects of antimonials are, diaphoresis, nausea, full vomiting and purging, which perhaps may be best obtained by the forms of prepared antimony and emetic tartar. Some allege that antimonials are of most use in fevers when they do not produce any sensible evacuation, as is said

said to be the case sometimes with James's powder. Some therefore prefer it in typhus, and emetic tartar in synochus, in which there is the appearance at first of more activity in the system, and more apparent cause for evacuation.

ANTHOREÆ *five anthithoræ radix: Aconiti salutariferi C. B. Aconiti anthoræ Linnei.* Wholesome wolfsbane; the roots.

This plant may be distinguished from the poisonous aconites by its leaves being more finely divided, and not at all bright or shining: it grows wild on the Alps. The root has been supposed useful against poisons, particularly that of the *thoræ* (whence its name.) Some nevertheless look upon this pretended antidote itself as unsafe: Fred. Hoffman says it is cathartic, and has produced dangerous disorders of the stomach, accompanied with heat, thirst, and anxiety. On the other hand Geoffroy relates, that he has never observed any purgative quality in this root, or any ill consequence from its use; that he has frequently exhibited it, and always with good success, against worms, and in malignant fevers, especially such as were occasioned by viscidities in the stomach and intestines; the dose from a scruple to a dram. A competency of experiments to fully determine this point, is as yet wanting, the root never having come into general practice. Its taste is acrid and bitter.

APARINES *folia: Aparines vulgaris C. B. Galii aparinae Lin.* Goosegrass, or clivers; the leaves [E.]

This is a slender rough plant, common in hedges, &c. It is recommended as an aperient, and in chronic eruptions; but practice has little regard to it.

APES. Bees; their bodies, honey, and wax.

Bees, dried and pulverised, are said to cure the alopecia; and given internally, to promote urine: but they have been for a long time strangers to the shops. The honey and wax shall be treated of under the respective heads.

APII *seu cleoselini radix: Apii graveolentis Linnei.* Smallage, the roots.

This plant is larger than the garden *apium* (parsley), of a darker green colour, and of a stronger and more unpleasant flavour. The roots are in the number of the five called opening roots, and have been sometimes prescribed as an ingredient in aperient apozems and diet-drinks; but are at present disregarded. The seeds of the plant are moderately aromatic, and were formerly used as carminatives; in which intention they are, doubtless, capable of doing service, though the other warm seeds, which the shops are furnished with, render these unnecessary.

APIUM HORTENSE, vide **PETROSELINUM.**

AQUILEGIÆ *folia, flores, semen: Aquilegia flore simplici Raii Syn. Aquilegia vulgaris Lin.* Columbines; the leaves, flowers, and seeds.

This plant grows wild in woods, but is not very common. It has been looked upon as aperient; and was formerly in great esteem among the common people for throwing out the small-pox and measles. A distilled water, medicated vinegar, and conserve, were prepared from the flowers; but they have long given place to medicines of greater efficacy.

ARANEARUM TELÆ. Cobwebs.

These are never met with in prescription; but are sometimes applied by the common people to stop the bleeding of slight wounds; this they seem to effect by adhering to the part, so as to close the orifices of the vessels, and prevent the effusion of their contents.

ARESTA BOVIS, vide **ONONIS.**

ARGENTINÆ *potentillæ anserinæ folia: Pentaphylloides minoris supini seu procumbentis foliis alatis argenteis et serratis flore luteo Mor. Hist. Ox. Potentilla anserinæ Lin.* Silverweed, or wild tansey; the leaves.

This plant grows wild about the sides of rivulets and other moist places: it has no stalk, the leaves lying flat on the ground. The writers on the materia medica in general look upon *argentina* as a very strong astringent: misled probably by its agreement in botanic characters with tormentil, which is known to be a powerful styptic. The sensible qualities of *argentina* promise no great virtue of this kind; for to the taste it discovers only a slight roughness, from whence it may be presumed to be entitled to a place only among the milder corroborants. As the astringency of tormentil is confined chiefly to its root, it might be thought that the *argentina* also has an astringent root: the root of this plant, however, is found to have no other than a pleasant sweetish taste, like that of parsnips, but not so strong.

ARGENTUM. Silver [*L. E.*]

Abundance of virtues have been attributed to crude silver by the Arabians, and by some also of later times, but on very little foundation.

This metal, taken in its crude state, has no effect in the body: combined with a small quantity of the nitrous acid, it proves a powerful, though not always a safe, hydragogue; with a larger, a strong caustic. The nitrous acid is the only one that perfectly dissolves this metal: on adding to this solution a minute portion of marine acid, or substances containing it, the liquor turns milky, and the silver falls to the bottom in form of a white calx: hence we are furnished with a method of discovering marine salt in waters, &c. See the preparations of silver.

ARGENTUM VIVUM: *Hydrargyrus; Mercurius.* Mercury or quicksilver [*L. E.*]

Mercury is an opaque silver-coloured mineral fluid; appearing to the eye like tin or lead when melted: it is heavier than any other fluid, and than most of the metallic bodies: it does not congeal in the greatest degree of natural cold hitherto known; in the fire it proves totally volatile. This mineral is either met with in its fluid form, in the earth; or extracted by art from certain ores. There are considerable mines of it in Hungary and Spain; but the greatest quantities come from the East-Indies.

The use of mercury in medicine seems to have been little known before the fifteenth century. The ancients looked upon it as a corrosive poison, though of itself perfectly void of acrimony, taste, and smell: there are examples of its having been lodged for years in cavities both of bones and fleshy parts, without its having injured or affected them. Taken into the body in its crude state, and undivided, it passes through the intestines unchanged, and has not been found to produce any considerable effect. It has in-

deed

deed been recommended in asthmas and disorders of the lungs; but the virtues attributed to it in these cases have not been warranted by experience.

Notwithstanding the mildness and activity of crude quicksilver undivided; when resolved by fire into the form of fume, or otherwise divided into very minute particles, and prevented from re-uniting by the interposition of proper substances, or combined with mineral acids, it has very powerful effects; affording the most violent poisons, and the most excellent remedies, that we are acquainted with.

The mercurial preparations, either given internally or introduced into the habit by external application, seem to liquefy all the juices of the body, even those in the minutest and most remote vessels; and may be so managed as to promote excretion through all the emunctories. Hence their common use in inveterate chronic disorders proceeding from a thickness and sluggishness of the humours, and obstinate obstructions of the excretory glands; in scrophulous and cutaneous diseases; and in the venereal lues. If their power is not restrained by proper additions to certain emunctories, they tend chiefly to affect the mouth; and occasion a plentiful evacuation from the salival glands.

The salutary effects of mercurials do not depend on the quantity of sensible evacuation. This medicine may be gradually introduced into the habit, so as, without occasioning any remarkable discharge, to be productive of very happy effects. To answer this purpose, it should be given in very small doses, in conjunction with such substances as determine its action to the kidneys or the pores of the skin. By this method inveterate cutaneous and venereal distempers have been cured,

without any other sensible excretion than a gentle increase of perspiration or urine. Where there are ulcers in any part, they discharge for some time a very fetid matter, the quantity of which becomes gradually less, and at length the ulcer kindly heals. If the mercury should at any time, from cold or the like, affect the mouth, it may be restrained by omitting a dose, and by warmth or suitable medicines promoting the perspiration.

‘ Dr Schwediauer’s TABLE of the PREPARATIONS OF MERCURY, arranged according to Bergman’s Table of Elective Attractions. Those marked with the asterisk are chiefly in use.

I. PREPARATION where the Mercury is simply purified.

* *Hydrargyrum purificatum.*

Mercurius crudus purificatus officinarum.

Argentum vivum purificatum. Pharm. Lond.

Anglis, Quicksilver, crude purified mercury; Germanis, Reines quecksilber; Gallis, Mercure pure.

II. PREPARATIONS in which the Mercury is only divided.

1. By gums or mucilages; such as gum arabic, tragacanth, &c.

* *Hydrargyrum gummosum.*

Mercurius gummosus of Plenck, (the inventor).

COMPOSITA.

* *Pilula ex hydrargyro gummosa.*

Pilulae ex mercurio gummosa.

Plenck. Pharm. Chir.

Solutio mercurialis gummosa.

Ibid.

Mixtura mercurialis. Pharm.

Noscom. Sti Georgii.

Potio mercurialis. Dispensatorii

Novi Brunswicensis.

Lac mercuriale. Plenck.

Syrupus hydrargyri. Pharmac.

Suoc.

2. By resins or balsams; such as turpentine, balsamum copai-va, &c;

F 4

* *Hydrar-*

- * *Hydrargyrum terebinthinatum*, &c.

COMPOSITA.

- * *Pilula ex hydrargyro terebinthinato*.
Pilula mercuriales. L.
Pilula mercuriales laxantes. G.
Pilula mercuriales sialagogæ.
Pharm. Danic.
Injectio mercurialis. *Pharm.*
Edinb. Pauperum.

3. By suet or vegetable oils; such as hog's-lard, goose-fat, or butter of cocoa-nuts.

- * *Hydrargyrum unguinosum*.

- * *Unguentum hydrargyri*.
Unguentum ex hydrargyro cæruleum. E.
Unguentum mercuriale, seu *unguentum Neapolitanum*. *Pharmac. Austriaco-Provincialis*.

COMPOSITA.

- a. *Unguentum cæruleum fortius*. L.
Unguentum cæruleum mitius. L.
Unguentum mercuriale. D.
- β. *Ceratum mercuriale*. L.
- γ. *Emplastrum mercuriale*. O.
Emplastrum ex hydrargyro. E.
Emplastrum ex gummi ammoniaco cum mercurio. L.
Emplastrum commune cum mercurio. L.
Emplastrum de ranis cum mercurio. A.

4. By calcareous earth; such as chalk, chelæ cancrorum, &c.

- Mercurius alkalisatus*.
Pulvis mercurialis. G.

III. PREPARATIONS where the Mercury is calcined by heat and air.

- * *Hydrargyrum calcinatum*.
Mercurius calcinatus. L. S.
Mercurius præcipitatus per se. L.

COMPOSITA.

- * *Pilula ex hydrargyro calcinato*.
Pilula syphiliticæ. *Pharm. Nofoc. Sti Thomæ*.
Pilula ex mercurio calcinato. G.
Pilula ex mercurio calcinato anodynæ. G.

IV. PREPARATIONS where the Mercury is partly divided and dissolved.

1. By sugar-candy, or saccharine compositions; such as conservæ rosarum, cynosbati, &c.

- * *Saccharum hydrargyratum*.

COMPOSITA.

- * *Bolus ex hydrargyro saccharata*.
Bolus cæruleus. Th.
Bolus mercurialis. G.

2. Honey.

- * *Mel hydrargyratum*.

COMPOSITA.

- Pilula Æthiopica*. E.
Pilula mercuriales purgantes. E. Paup.
Pilula Bellosti.

3. Mercury combined with sulphur, (flowers of brimstone).

- * *Hydrargyrum sulphuratum*.
a. By simple trituration or fusion.
* *Hydrargyrum sulphuratum nigrum*.
Æthiops mineralis. O.

COMPOSITA.

- Pulvis Æthiopicus*. G.
b. By sublimation.
* *Hydrargyrum sulphuratum rubrum*.
Cinnabaris factitia, seu *artificialis*. O.

COMPOSITA.

- Pulvis antilyssus Sinenfis*. O.

4. Mercury combined with sulphur of antimony.

- a. By simple trituration.
* *Sulphur antimonii hydrargyratum nigrum*.
Æthiops antimonialis. O.

COMPOSITA.

- Pilula Æthiopica*, E. D.
b. By sublimation.
Sulphur antimonii hydrargyratum rubrum.
Cinnabaris antimonii. O.

COMPOSITA.

- Bolus Cinnabarinus*. G.

5. Mercury combined with sulphur by precipitation.

[See below under the Preparations with the Vitriolic Acid.]

V. PREPARATIONS where the mercury is reduced to the form of a metallic salt or calx by acids.

1. Acid of suet. 2. Acid of common salt. 3. Acid of sugar. 4. Acid of amber. 5. Acid of arsenic. 6. Acid of wood-forsell. 7. Acid of phosphorus. 8. Acid of vitriol. 9. Acid of sugar of milk. 10. Acid of tartar. 11. Acid of citron or lemon. 12. Acid of nitre. 13. Acid of fluor mineral. 14. Acid of vinegar. 15. Acid of borax. 16. Acid of Berlin blue. 17. Aërial acid.

1. Mer-

1. Mercury combined with acid of suet (acidum sebi.)

Hydrargyrum sebinum.

2. Mercury combined with the muriatic acid; or acid of common salt.

* a. *Hydrargyrum muriatum.*

* *Hydrargyrum muriatum* for-
tius. { By sublimation,
or
by precipitation.

Mercurius sublimatus corrosif-
vus. O.

Mercurius sublimatus albus. O.

Mercurius corrosivus albus.
S. L.

Mercurius corrosivus via hu-
mida paratus. Monnet.

COMPOSITA.

Solutio sublimati spirituosæ of
Van Swieten.

Solutio mercurii sublimati cor-
rosivi. E.

Mixtura mercurialis. S.

Mercurius sublimatus solutus.
G.

* *Solutio hydrargyri saliti fortioris*
aquosa.

Pilulæ e mercurio corrosivo al-
bo. S.

* *Lotio syphilitica flavæ, (lotio ex hy-*
drargyro muriato fortiori.)

Aqua phagedænica. O.

Liquor mercurialis. A.

Lotio mercurialis. Tb.

Solutio sublimati balsamica.
Plenck.

* *Liquor ad condylomata.*

Aqua caustica pro condyloma-
tibus. *Plenck.*

* *Calx hydrargyri muriatæ; i.e. the*
calx of mercury united with
some muriatic acid.

By sublimation.

* *Hydrargyrum muriatum mitius.*

Mercurius dulcis (sublimatione
paratus). O.

Mercurius dulcis sublimatus.
L.

Calomel seu calomelas. L.

Aquila alba.

Panacea mercurialis.

Mercurius dulcis lunaris. *Schroe-*
der.

COMPOSITA.

Bolus mercurialis. E.

Bolus jalappæ cum mercurio.
Ibid.

Bolus thei cum mercurio. *Ibid.*

Pilulæ calomelanos. G.

Pilulæ Plummeri. E.

Pilulæ alterantes Plummeri. O.

Pilula depurans. Tb.

Pulvis Plummeri. O.

Pilulæ mercuriales purgantes.

A.

Pilulæ catarrhales purgantes.

D.

Pilulæ laxantes cum mercurio.

Ibid.

Pulvis e scammonio cum mer-
curio. Tb.

* *Lotio syphilitica nigra, (lotio ex hy-*
drargyro muriato mitiori.)

Lotio mercurialis. G.

By precipitation.

a. From its solution in nitrous acid
by common salt.

* *Calx hydrargyri muriatæ Scheelei.*

Mercurius præcipitatus dulcis
of *Scheele*, (the inventor.)

b. From its solution in muriatic
acid by vegetable alkali.

Mercurius præcipitatus albus.

L.

c. From its solution in muriatic
acid by mineral alkali.

Mercurius præcipitatus albus.

A.

d. From its solution in muriatic
acid by the volatile alkali.

Mercurius præcipitatus albus.

E.

e. From its solution in muriatic
acid by copper.

Mercurius præcipitatus viridis.

E.

COMPOSITA.

Unguentum e mercurio præci-
pitato. L.

Linimentum mercuriale. E.
Paup.

3. With the acid of sugar.

Hydrarg. saccharatum. *Berg-*
man.

4. With the acid of amber.

Hydrarg. succinatum. *Berg-*
man.

5. With the acid of arsenic.

Hydrarg. arsenicatum. *Berg-*
man.

6. With the acid of wood-sorrel,
(oxalis acetosella Linnæi).

Hydrargyrum oxalinum. *Berg-*
man.

7. With phosphoric acid.

Hydrargyrum phosphoratum.
Bergman.

By precipitation from its solution in
the nitrous acid by recent
urine.

Rosa mineralis. O.

8. With the vitriolic acid.

* a. *Hydrargyrum vitriolatum.*

Vitriolum mercurii. O.

Oleum

Oleum mercurii. O.
 b. Calx hydrargyri vitriolata (flava.)
 Turpethum miltierale. O.
 Mercurius emeticus flavus. L.
 Mercurius flavus. E.
 Mercurius præcipitatus luteus.
 D.

Turpethum nigrum. O.
 c. Mercury precipitated from its solution in nitrous acid by hepar sulphuris or hepar calcis.
 Mercurius præcipitatus niger.
 O.

9. With the acid of sugar of milk.

10. With the acid of tartar.

a. Hydrargyr. tartarifatum. Bergman.

b. With purified tartar, commonly called cream of tartar, (veg. alkali supersaturated with the acid of tartar).
 Tartarus hydrargyratus.

Terre suilletee mercurielle of Dr Preßavin, (the inventor.)

c. Mercury precipitated from its solution in nitrous acid by the acid of tartar.

* Calx hydrargyri tartarifata flava; vulgo, Pulvis Constantinus.

d. Mercury precipitated from its solution in muriatic and tartarous acid by fixed vegetable alkali.

* Calx hydrargyri tartarifata alba; vulgo, Pulvis argenteus.

11. With the acid of citron.

Hydrargyrum citratum. Bergman.

12. With the acid of nitre.

* Hydrargyrum nitratum.

A. Simply dissolved.

* Acidum nitri hydrargyratum.

Solutio mercurii. E.

COMPOSITA.

Unguentum citrinum. E. A. S.

B. Evaporated and calcined by fire.

* Hydrargyrum nitratum rubrum.

Mercurius corrosivus ruber.

L. E.

Mercurius præcipitatus ruber.

O.

Pulvis principis. O.

Mercurius corallinus. L.

Mercurius tricolor. O.

Panacea mercurii. O. O.

Arcanum corallinum.

Panacea mercurii rubra. O.

COMPOSITA.

Balsamus mercurialis. Plenck.

2.

Unguentum ophthalmicum. S. Ves.

Balsamum ophthalmicum rubrum. D.

Unguentum præcipitatum. G.

Unguentum ad lippitudinem. Th.

Unguentum mercuriale rubrum. D.

Unguentum pomatum rubrum. D.

C. Precipitated from its solution in nitrous acid.

a. By volatile alkali.

* Hydrargyrum nitratum cinereum.

Pulvis mercurii cinereus. E.

Turpethum album. O.

Mercurius præcipitatus dulcis.

O.

COMPOSITA.

Dr Ward's white drops, (mercury precipitated by nitrous acid, and redissolved by sal ammoniac).

Vegetable syrup.

Syrup de Bellet.

b. By vinous volatile alkali, (spiritus salis ammoniaci vinosus).

Turpethum nigrum.

Mercurius præcipitatus niger.

c. By fixt vegetable alkali.

Mercurius præcipitatus fuscus.

Wuriz.

d. By copper.

Mercurius præcipitatus viridis.

B.

13. With the acid of spar, (fluor mineralis.)

* Hydrargyrum acetatum. Bergman.

14. With the acid of vinegar.

Hydrargyrum fluoratum. Bergman.

COMPOSITA.

Troches or pills of Keyser.

15. With the acid of borax.

Hydrargyr. boraxatum. Bergman.

16. With the acid of Berlin blue.

17. With the aerial acid, (fixt air).

Hydrargyrum aëratum. Bergman.

* The marks of pure mercury are,

its globules not losing their spherical figure when poured on wood; its

not communicating a tinge to wa-

ter,

ter, or sweetness to vinegar, when rubbed with them; its evaporating entirely in an iron spoon over the fire; and its having a shining appearance without any pellicle on its surface. Mercury is best purified by distillation in an iron pot, with a long neck bent and immersed in vinegar.

Some use it in its metallic state in intumescencia, from its weight, but seldom with good effect; and sometimes it must do harm. There seems to be no useful medical purpose which may not be served by it, in the best and safest manner, in its divided state in the form of the mercurial ointment and pill of the Edinburgh pharmacopœia. Its evacuant effects are commonly referred to its stimulant power exerted occasionally on the bowels, the skin, and the salivary glands; and thus some suppose it expels venereal virus from the body; while others are of opinion that it neutralises the virus. In virulent gonorrhœa, it is doubted whether mercury be necessary. It is commonly treated like any similar inflammation; and the chief things attended to are cleanliness of the parts, a regular belly, and an abstinence from every thing stimulant in food, drink, &c. An injection of oil with calomel, or white precipitate, is much used, and some prefer a watery solution of opium. The more active injections have sometimes very disagreeable consequences.

When the constitution is affected, which is known by ulcers on the glans, buboes, ulcers in the mouth or throat, copper-coloured spots and ulcers on the surface, nodes, &c. mercury is thrown into the body either by friction or by the mouth. The general rule is, to keep up a slight soreness of the gums for some short time after the symptoms disappear; at the same time it is to be remembered, that

mercury sometimes continues gleets, and induces ulcers, that are difficultly distinguished from venereal ones; and that these last only yield to warm bathing, diaphoretic diluents, opiates, country air, and milk diet. Corrosive sublimate is sometimes used, as more speedily arresting disagreeable, spreading, or dangerous ulcers; but the completion of the cure should always be trusted to the mild preparations alone. Mercury is also used in rabies canina, in worms, in hydrocephalus internus, in tetanus, and is by some considered as an antidote to the variolous matter.

ARISTOLOCHIA. Birthwort. Three roots of this name are directed for medicinal use:

(1) **ARISTOLOCHIA LONGA** *Lin.* [L.] Long birthwort. This is a tuberous root, sometimes about the size of the finger, sometimes as thick as a man's arm, and a foot in length: it is nearly of an equal thickness all over, or a little thicker in the middle than at the ends: the outside is of a brownish colour; the inside yellowish.

(2) **ARISTOLOCHIA ROTUNDA** *Lin.* Round birthwort. This has scarce any other visible difference from the foregoing than its roundish shape.

(3) **ARISTOLOCHIA TENUIS.** *Aristolochia clematitis* *Lin.* [L. E.] Slender birthwort. This is a long and slender root, rarely exceeding the thickness of a goose-quill.

These roots are the produce of Spain, Italy, and the southern parts of France. Their smell is somewhat aromatic; their taste warm and bitterish. Authors in general represent them as extremely hot and pungent:

gent: some say they are the hottest of all the aromatic plants; but as usually met with in the shops, they have no great pungency. The long and round sorts, on being first chewed, scarce discover any taste, but in a little time prove nauseously bitterish; the long somewhat the least so. The other sort instantly fills the mouth with an aromatic bitterness, which is not ungrateful. Their medical virtues are, to heat, stimulate, attenuate viscid phlegm, and promote the fluid secretions in general; they are principally celebrated in suppressions of female evacuations. The dose in substance is from a scruple to two drams. The long sort is recommended externally for cleansing and drying wounds and ulcers, and in cutaneous diseases.—The *aristolochia tenuis*, is an ingredient in theriaca; and in want of this species, the *longa* is allowed to be substituted to it by the London college.

ARMORACIA, vide RAPHANUS RUSTICANUS.

ARNICA, vide DORONICUM.

ARSENICUM. Arsenic.

Arsenic is contained, in greater or less quantity, in most kinds of ores, particularly in those of tin and bismuth, in the white pyrites, and in the mineral called *cobalt*; from which last greatest part of the arsenic brought to us is extracted by a kind of sublimation: the arsenic arises at first in the form of greyish meal; which, more carefully resublimed, concretes into transparent masses, the *white* arsenic of the shops.

Arsenic sublimed with one-tenth its weight of sulphur, unites therewith into a bright yellow mass, in some degree transparent; the common *yellow* arsenic. On doubling

the quantity of sulphur, the compound proves more opaque and compact; of a deep red colour, resembling that of cinnabar, but with this difference, that it loses of its beauty upon being reduced into powder, whilst that of cinnabar is improved by this means: this is the common *red* arsenic. By varying the proportions of arsenic and sulphur, sublimates may be obtained of a great variety of shades of yellow and red.

Natural mixtures of arsenic and sulphur resembling the foregoing preparations, are not unfrequently met with in the earth. The fossil red arsenic is the *sandaracha* of the Greeks, the *realgar* and *risgal* of the Arabians. Both the red and yellow, when of a smooth uniform texture, are named *zarnichs*; and when composed of small scales or leaves, *auripigmenta*, or *orpiments*: the last are the only substances to which the Greeks gave the name *αργεϊνον*. That the *zarnichs* and *orpiments* really contain arsenic (contrary to the opinion of some late writers) is evident from sundry experiments, whereby a perfect arsenic, and in notable quantity, is obtainable from them. The compilers of a former edition of the Edinburgh dispensatory therefore very justly gave *sandaracha Græcorum* as a synonymon to *red arsenic*; and *auripigmentum* to the yellow.

The pure or white arsenic has a penetrating corrosive taste; and taken into the body proves a most violent poison. Besides the effects which it has in common with other corrosives, it remarkably attenuates the coats of the stomach, occasions a swelling and sphacelation of the whole body, and a sudden putrefaction after death particularly, as is said, of the genitals in men. Where the quantity is so very small as not to prove fatal, tremors, palsies, and

linger-

lingering hectics succeed. The remedies recommended against this poison are, milk and oily liquors immediately and liberally drank.

Some recommend acids, particularly vinegar, as antidotes against this poison. Others recommend a watery solution of calcareous or alkaline hepar sulphuris, which is found to combine with arsenic, and destroys most of its properties. It is said to be better of a little iron in the solution. The dry hepar may also be made into pills, and warm water drank above them.

White arsenic, in very minute doses, mixt with syrup and milk, has been ventured on, and recommended internally in cases of cancer. A very dilute application of arsenic is also made to the part; but even this is sometimes dangerous.

The red and yellow arsenics, both native and factitious, have little taste, and are much less virulent in their effects than the foregoing. Sulphur, which restrains the power of mercury and the antimonial metal, remarkably abates the virulence of this poisonous mineral also. Such of these substances as participate more largely of sulphur, seem to be almost innocent: the factitious red arsenic, and the native orpiments, have been given to dogs in considerable quantity, without their being productive of any apparent ill consequences.

ARTEMISIÆ folia: *Artemisia vulgaris majoris* C. B. *Artemisia vulgaris* Lin. Mugwort; the leaves [L. E.]

This plant grows plentifully in fields, hedges, and waste places, throughout England; and flowers in June. In appearance it somewhat resembles the common wormwood: the difference most obvious to the eye is in the flowers, those

of wormwood hanging downwards, whilst the flowers of mugwort stand erect.

The leaves of this plant have a light aromatic smell, and an herbaceous bitterish taste. They are principally celebrated as uterine and antihysterie: an infusion of them is sometimes drank, either alone or in conjunction with other substances, in suppression of the menstrual evacuations. This medicine is certainly a very mild one, and considerably less hot than most others to which these virtues are attributed: in some parts of this kingdom, mugwort is of common use as a pot-herb.

ARTHANITÆ *five cyclaminis radix: Cyclaminis orbiculato folio inferne purpurascente* C. B. *Cyclaminis Europæi* Lin. Sowbread; the root.

This plant is met with in the gardens of the curious. The root has, when fresh, an extremely acrimonious burning taste, which it almost entirely loses on being dried. It is recommended as an errhine; in cataplasms for scirrhus and scrophulous tumours; and internally as a cathartic, detergent, and aperient: it operates very slowly, but with great virulence, inflaming the fauces and intestines.

ARI radix: *Ari maculati maculis nigris* C. B. *Ari maculati* Lin. Wake-robin; the root [L. E.]

This plant grows wild under hedges, and by the sides of banks, in most parts of England. It sends forth in March three or four triangular leaves, which are followed by a naked stalk, bearing a purplish pistil inclosed in a long sheath: this is succeeded in July by a bunch of reddish berries. In some plants, the leaves are spotted with black, in others with white spots, and in others

others not spotted at all: the black spotted sort is supposed to be the most efficacious.

All the parts of arum, particularly the root, have an extremely pungent, acrimonious taste; if the root be but lightly chewed it continues to burn and vellicate the tongue for some hours, occasioning at the same time a considerable thirst: these symptoms are alleviated by butter, milk, or oily liquors. Dried and kept for some time it loses much of its acrimony, and becomes at length an almost insipid farinaceous substance.

The root is a powerful stimulant and attenuant. It is reckoned a medicine of great efficacy in some cachectic and chlorotic cases, in weakness of the stomach occasioned by a load of viscid phlegm, and in such disorders in general as proceed from a cold sluggish disposition of the solids and lentor of the fluids. I have experienced great benefit from it in rheumatic pains, particularly those of the fist kind, and which were seated deep. In these cases I have given from ten grains to a scruple of the fresh root twice or thrice a-day, made into a bolus or emulsion with unctuous and mucilaginous substances, which cover its pungency, and prevent its making any painful impression on the tongue. It generally excited a slight tingling sensation through the whole habit, and, when the patient was kept warm in bed, produced a copious sweat.

The only officinal preparation in which this root is an ingredient, is a compound powder; in which form its virtues are very precarious. Some recommend a tincture of it drawn with wine; but neither wine, water, nor spirits, extract its virtues.

ASAFOETIDA. Afafetida

[L. E.] the concrete juice of a large umbelliferous plant growing in Persia. *Ferula asafetida* Lin.

This juice exudes (from wounds made in the root of the plant) liquid, and white like milk: on being exposed to the air, it turns of a brownish colour, and gradually acquires different degrees of consistency. It is brought to us in large irregular masses, composed of various little shining lumps or grains, which are partly of a whitish colour, partly reddish, and partly of a violent hue. Those masses are accounted the best which are clear, of a pale reddish colour, and variegated with a great number of elegant white tears.

This drug has a strong fetid smell, somewhat like that of garlick; and a bitter, acrid, biting taste. It loses with age of its smell and strength, a circumstance to be particularly regarded in its exhibition. It consists of about one third part of pure resin, and two-thirds of gummy matter; the former soluble in rectified spirit, the other in water. Proof-spirit dissolves almost the whole into a turbid liquor; the tincture in rectified spirit is transparent.

Asafetida is the strongest of the fetid gums, and of frequent use in hysteric and different kinds of nervous complaints. It is likewise of considerable efficacy in flatulent colics; and for promoting all the fluid secretions in either sex. The ancients attributed to this medicine many other virtues, which are at present not expected from it.

This gummy-resin is an ingredient in the officinal gum-pills, compound powder of myrrh [L.] fetid tincture, tincture of foot, fetid volatile spirit [L. E.] antihysteric plaster, and compound tincture of castor [E.]

ASARI folia: Asari C. B. Asa-

ri Europæi Lin. Asarabacca: the leaves.

Asarum is a very low evergreen plant, growing naturally in France, Italy, and other warm countries: the dried roots have been generally brought from the Levant; those of our own growth being supposed weaker.

Both the roots and leaves have a nauseous, bitter, acrimonious, hot taste; their smell is strong, and not very disagreeable. Given in substance from half a dram to a dram, they evacuate powerfully both upwards and downwards. It is said, that tinctures made in spirituous menstrua, possess both the emetic and cathartic virtues of the plant: that the extract obtained by inspissating these tinctures, acts only by vomit, and with great mildness: that an infusion in water proves cathartic, rarely emetic: that aqueous decoctions made by long boiling, and the watery extract, have no purgative or emetic quality, but prove notable diaphoretics, diuretics, and emmenagogues.

The principal use of this plant among us is as a sternutatory. The root of asarum is perhaps the strongest of all the vegetable errhines, white hellebore itself not excepted. Snuffed up the nose, in the quantity of a grain or two, it occasions a large evacuation of mucus, and raises a plentiful spitting. The leaves are considerably milder, and may be used, to the quantity of three, four, or five grains. Geoffroy relates, that after snuffing up a dose of this errhine at night, he has frequently observed the discharge from the nose to continue for three days together; and that he has known a paralysis of the mouth and tongue cured by one dose. He recommends this medicine in stubborn disorders of the head, proceeding from viscid tenacious matter, in pal-

sies, and in soporific distempers. The leaves are an ingredient in the *pulvis sternutatorius* of the shops [L.E.]

ASCLEPIAS, vide **VINCETOXICUM**.

ASELLI, vide **MILLEREDÆ**.

ASPALATHUS, vide **RHODIUM**.

ASPARAGI radix: *Asparagi sativi C. B. Asparagi officinalis Lin.* Asparagus; the root.

This plant is cultivated in gardens for culinary use. The roots have a bitterish mucilaginous taste, inclining to sweetness; the fruit has much the same kind of taste; the young shoots are more agreeable than either. Asparagus promotes appetite, but affords little nourishment. It gives a strong ill smell to the urine in a little time after eating it, and for this reason chiefly is supposed to be diuretic; it is likewise esteemed aperient and deobstruent; the root is one of the five called opening roots. Some suppose the shoots to be most efficacious; others the root; and others the bark of the root. Stahl is of opinion, that none of them have any great share of the virtues usually ascribed to them. Asparagus appears from experience to contribute very little either to the exciting of urine when suppressed, or increasing its discharge; and in cases where aperient medicines generally do service, this has little or no effect.

ASPERULÆ flores: *Asperula aut aspergula odorata nostratis Lob. Asperula odorata Lin.* Woodroof; the flowers.

This is a low umbelliferous plant, growing wild in woods and copses, and flowering in May. It has an exceed-

exceeding pleasant smell, which is improved by moderate exsiccation: the taste is subsaline, and somewhat austere. It imparts its flavour to vinous liquors. Asperula is supposed to attenuate viscid humours, and strengthen the tone of the bowels; it is recommended in obstructions of the liver and biliary ducts, and by some in epilepsies and palsies; modern practice has nevertheless rejected it.

ASPHALTUS, vide **BITUMEN JUDÆICUM**.

ASPLENIUM, vide **CETERACH**.

ATRIPLICIS OLIDÆ folia: *Atriplicis foliæ C. B. Chenopodii fetidi Tourn. Chenopodii vulvaria Lin.* Stinking orach, or arach; the leaves [L. E.]

This is a low plant, sprinkled all over with a kind of whitish clammy meal: it grows about dunghills, and other waste places. The leaves have a strong fetid smell, which the hand, by a light touch, becomes so impregnated with, as not to be easily freed from. Its smell has gained it the character of an excellent anti-hysteric; and this is the only use it is applied to. Tournefort recommends a spirituous tincture, others a decoction in water, and others a conserve of the leaves, as of wonderful efficacy in uterine disorders.

ATRIPLEX SATIVA. Garden orach, or arach.

The garden oraches (which are either of a pale greenish, or purplish red colour, and hence named *atriplex alba* and *rubra*) are chiefly employed for culinary purposes. They are cooling, and gently laxative; a decoction of the leaves is recommended in costiveness, where the patient is of a hot bilious disposition.

AVENA. Oats.

This grain is an article rather of food than of medicine. It is sufficiently nutritive and easy of digestion. The gruels made from it have likewise a kind of soft mucilaginous quality; by which they obtund acrimonious humours, and prove useful in inflammatory disorders, coughs, hoarseness, roughness, and exulcerations of the fauces.

AURANTIORUM HISPALENSIUM succus, cortex, et flores: *Fructus Mali aurantiæ majoris C. B. Citri aurantii Lin.* Seville oranges; the juice, yellow rind, and flowers [L. E.] The Edinburgh college uses also the flowers of the tree.

The orange is a beautiful evergreen tree, or rather shrub, bearing flowers and fruits all the year: it is a native of the warmer climates, and does not well bear the winters of this.

The flowers are highly odoriferous, and have been for some time past of great esteem as a perfume: their taste is somewhat warm, accompanied with a degree of bitterness. They yield their flavour by infusion to rectified spirit, and in distillation both to spirit and water: the bitter matter is dissolved by water, and, on evaporating the decoction, remains entire in the extract. The distilled water is ordered to be kept in the shops by the Edinburgh college: it is called by foreign writers *aqua naphæ*. An oil distilled from these flowers is brought from Italy under the name of *oleum* or *essentia neroli*.

The outer yellow rind of the fruit is a grateful aromatic bitter; and, in cold phlegmatic constitutions, proves an excellent stomachic and carminative, promoting appetite, warming the habit, and strengthening the tone of the viscera. Orange peel appears to be very considerably warmer

warmer than that of lemons, and to abound more with essential oil: to this circumstance therefore due regard ought to be had in the use of these medicines. The flavour of the first is likewise supposed to be less perishable than that of the other: hence the London college employ orange-peel in the spirituous bitter tincture which is designed for keeping; whilst in the bitter watery infusion, lemon-peel is preferred. A syrup and two distilled waters are for the same reason prepared from the rind of oranges in preference to that of lemons.

The juice of oranges is a grateful acid liquor, of considerable use in febrile or inflammatory distempers, for allaying heat, abating exorbitant commotions of the blood, quenching thirst, and promoting the salutary excretions: it is likewise of use in scurvies, and given in conjunction with the *cochlearia*, *nasurtium*, or other acrid antiscorbutics, as in the *succi scorbutici* of the shops.

AURANTIA CURSLAVENSIA. Curassao oranges.

These are the small young fruit of the Seville orange dried. They are moderately warm bitterish aromatics, of a flavour sufficiently agreeable.

AURICULA JUDÆ: *Fungus auricula Judæ, coloris ex cineraceo nigricantis, perniciosus, in sambuci caudice nascens* J. B. *Peziza auricula* Lin. Jews-ear, a fungus growing on old alder trees. This fungus is said by some to be a strong purgative; by others an astringent. The more judicious medical writers have declared its internal use dangerous.

AURICULÆ MURIS *folia: Pilosilla majoris; repentis hirsutæ* C. B.

Silene rupestris Lin. Mousse-ear; the leaves.

This is a low creeping plant, covered with a kind of hairs: it grows wild in dry pasture grounds, and flowers in June and July. The leaves have a somewhat rough bitterish taste: they are recommended as astringents, but practice pays no regard to them.

AURIPIGMENTUM. Orpiment; a mineral composed of sulphur and arsenic. See **ARSENICUM**.

AURUM. Gold.

This metal was introduced into medicine by the Arabians, who esteemed it one of the greatest cordials and comforters of the nerves. From them Europe received it without any diminution of its character; in foreign pharmacopœias it is still retained, and even mixed with the ingredients from which simple waters are to be distilled. But no one, it is presumed, at this time, expects any singular virtues from it, since it certainly is not alterable in the human body. Mr Geoffroy, though unwilling to reject it from the cordial preparations, honestly acknowledges, that he has no other reason for retaining it, than complaisance to the Arabian schools. The chemists have endeavoured, by many elaborate processes, to extract what they call a sulphur or anima of gold: but no method is as yet known of separating the component parts of this metal; all the tinctures of it, and aurum potabiles, which have hitherto appeared, are real solutions of it in aqua regia, diluted with spirit of wine or other liquors, and prove injurious to the body rather than beneficial.

AUXUNGIA. Fat.

A great variety of fats were introduced into medicine by the Arabians

bians, and recommended as possessing distinct virtues. The college of Wirtemberg, in the edition of their dispensatory, published in 1741, direct no less than twenty-eight different fats to be kept in the shops: some of these, they inform us, are attenuating and resolvent; such are those of the heron, wild cat, stork, partridge, coney, hare, fox, Alpine mouse, the badger, boar, wolf, serpents, and vipers: others are heating, detergent, and septic; those of the eel, the pike, and the umber: a third class is emollient; the fat of the ox, the deer, and the goat: and a fourth, emollient, dige-
 rent, and lenient; this last comprehends the fat of the duck, goose, dog, capon, beaver, horse, hen, and human fat. Experience, however, does not countenance these different virtues ascribed to different fats. They have all one common emollient quality, relax the part to which they are applied, and prevent perspiration: these effects, with the consequences of them, may be expected in a greater or less degree from fats of every kind. The London college has therefore retained only three fats, of different consistencies, for different mixtures, viz. viper's fat, hog's lard, and mutton suet. 'The Edinburgh college retains only the two last.' These are certainly sufficient for answering all the intentions that substances of this kind are employed for.

BALAUSTIA: *Flores balaustiae flore pleno majore C. B. Punica granati var. β Lin.* Balaustines: the flowers of the balaustine or double-flowered pomegranate tree [L. E.]

The balaustine is a low tree, or rather shrub, growing wild in Italy, &c. The flowers are of an elegant red colour, in appearance resembling a dried red rose. Their taste is bitterish and astringent.

Balaustines are recommended in diarrhoeas, dysenteries, and other cases where astringent medicines are proper.

BALSAMITÆ MARIS *fructus costii hortorum solia: Menthae borten- sis corymbifera C. B. Tanacetii balsamita Lin.* Costmary; the leaves.

This was formerly a very common garden plant, and of frequent use both for culinary and medicinal purposes: but it is at present very little regarded for either; though it should seem, from its sensible qualities, to be equal or superior, as a medicine, to some aromatic herbs which practice has retained. The leaves have a bitterish, warm, aromatic taste; and a very pleasant smell, approaching to that of mint or a mixture of mint and maudlin. Water elevates their flavour in distillation; and rectified spirit extracts it by infusion.

BALSAMUM CANADENSE [E.] vide **TEREBINTHUM ARGENTORATENSIS**.

BALSAMUM COPAIBA [L. E.] Balsam of Copaiba: a liquid resinous juice, flowing from incisions made in the trunk of a large tree (*Copaifera officinalis Lin.*) which grows in the Spanish West-Indies.

The juice is clear and transparent, of a whitish or pale yellowish colour, an agreeable smell, and a bitterish pungent taste. It is usually about the consistence of oil, or a little thicker: long kept, it becomes nearly as thick as honey, retaining it clearness; but has not been observed to grow dry or solid, as most of the other resinous juices do. We sometimes meet with a thick sort of balsam of Copaiba, which is not at all transparent, or much less so than the foregoing, and generally has a portion of turbid watery liquor at the

the bottom. This sort is probably either adulterated by the mixture of other substances, or has been extracted by coction from the bark and branches of the tree; its smell and taste are much less pleasant than those of the genuine balsam.

Pure balsam of Copaiba dissolves entirely in rectified spirit, especially if the menstruum be previously alkalinized: the solution has a very fragrant smell. Distilled with water, it yields a large quantity of a limpid essential oil; and in a strong heat, without addition, a blue oil.

The balsam of Copaiba is an useful corroborating detergent medicine, accompanied with a degree of irritation. It strengthens the nervous system, tends to loosen the belly, in large doses proves purgative, promotes urine, and cleanses and heals exulcerations in the urinary passage, which it is supposed to perform more effectually than any of the other balsams. Fuller observes, that it gives the urine an intensely bitter taste, but not a violet smell as the turpentine do.

This balsam has been principally celebrated in gleet and the fluor albus, and externally as a vulnerary. The author above mentioned, recommends it likewise in dysenteries, in scorbutic cachexies, in diseases of the breast and lungs, and in an acrimonious or putrescent state of the juices: he says, he has known very dangerous coughs, which manifestly threatened a consumption, cured by the use of this balsam alone; and that, notwithstanding its being hot and bitter, it has good effects even in hectic cases. 'Most physicians seem now to consider balsams and resins too stimulant to be ventured on in phthical affections.'

The dose of this medicine rarely exceeds twenty or thirty drops, tho' some direct sixty or more. It may be conveniently taken in the form

of an elæosaccharum; or in that of an emulsion, into which it may be reduced by triturating it with almonds, or rather with a thick mucilage of gum arabic, till they are well incorporated, and then gradually adding a proper quantity of water.

The only officinal preparation of this balsam is an empyreumatic oil distilled with the addition of gum guaiacum [L.] 'A balsam of Rakasiri, got from an unknown American tree, said to be used by the Indians like balsam of capivi in gleet, fluor albus, &c. is recommended by some authors.'

BALSAMUM GILEADENSE, vide OPOBALSAMUM.

BALSAMUM PERUVIANUM [L. E.] Balsam of Peru.

The common Peruvian balsam is said to be extracted by coction in water, from an odoriferous shrub (*Myroxylon perniferum* Lin.) growing in Peru and the warmer parts of America. This balsam, as brought to us, is nearly of the consistence of thin honey, of a reddish brown colour, inclining to black, an agreeable aromatic smell, and a very hot biting taste. Distilled with water, it yields a small quantity of a fragrant essential oil of a reddish colour; and in a strong fire, without addition, a yellowish red oil.

Balsam of Peru is a very warm aromatic medicine, considerably hotter and more acrid than Copaiba. Its principal effects are, to warm the habit, to strengthen the nervous system, and attenuate viscid humours. Hence its use in some kinds of asthma, gonorrhœas, dysenteries, suppressions of the uterine discharges, and other disorders proceeding from a debility of the solids, or a sluggishness and inactivity of the juices. It is also employed externally, for cleansing and healing wounds and ulcers;

and sometimes against palsies and rheumatic pains.

This balsam does not unite with water, milk, expressed oils, animal fats, or wax: it may be mingled in the cold with this last, as also with the sebaceous substance called expressed oil of mace; but if the mixture be afterwards liquefied by heat, the balsam separates and falls to the bottom. It may be mixed with water into the form of an emulsion, after the same manner as the balsam of Copaiba. Alkaline lixivium dissolve great part of it; and rectified spirit the whole.

This balsam is an ingredient in the *balsamum guaiacinum*, *pilula aromatica* [L.] *elixir guaiacin. ambo*, *elix. traumatic.* and *trochisci bechici cum opio* [E.]

There is another sort of balsam of Peru, of a white colour, and considerably more fragrant than the former. This is very rarely brought to us. It is said to be the produce of the same plant which yields the common or black balsam; and to exude from incisions made in the trunk.

BALSAMUM TOLUTANUM [L. E.] Balsam of Tolu.

This flows from a tree, *toluifera balsamum* Lin. growing in Tolu, in the Spanish West-Indies; from whence the balsam is brought to us in little gourd shells. It is of a yellowish brown colour, inclining to red; in consistence thick and tenacious: by age it grows hard and brittle, without suffering any great loss of its more valuable parts. The smell of this balsam is extremely fragrant, somewhat resembling that of lemons; its taste warm and sweetish, with little of the pungency, and nothing of the nauseous relish, which accompany the other balsams. It has the same general virtues with the foregoing; but is much milder,

and for some purposes, particularly as a corroborant in gleets and seminal weaknesses, is supposed to be more efficacious. It is an ingredient in the *vulnerary balsam* [L.] *tinctura Tolutana*, and *syrupus balsamicus* [E.]

BARDANÆ MAJORIS, *lappa majoris, radix: Lappa majoris, arctii Dioscoridis C. B. Arctii lappæ Lin.* Burdock; the root [E.]

This is a common plant about way-sides, sufficiently known from its scaly heads, or burs, which stick to the clothes.—The seeds have a bitterish subacid taste: they are recommended as very efficacious diuretics, given either in the form of emulsion, or in powder, to the quantity of a dram.—The roots taste sweetish, with a slight austerity and bitterishness: they are esteemed aperient, diuretic, and sudorific; and said to act without irritation, so as to be safely ventured upon in acute disorders. Decoctions of them have of late been used in rheumatic, gouty, venereal, and other disorders; and preferred by some to those of sarsaparilla.

BDELLIUM [L.] Bdellium.

Bdellium is a gummy-resinous concrete juice brought from Arabia and the East-Indies, in glebes of different figures and magnitudes. It is of a dark reddish brown colour, and in appearance somewhat resembles myrrh; upon cutting a piece, it looks somewhat transparent, and, as Geoffroy justly observes, like glue. It grows soft and tenacious in the mouth, sticks to the teeth, has a bitterish taste, and not a disagreeable smell. Bdellium is recommended as a sudorific, diuretic, and uterine; and in external applications for maturing tumors, &c. In the present practice, it is scarce other-

otherwise made use of than as an ingredient in the theriaca.

BECABUNGÆ, seu *Anagallidis aquatica*, folia: *Veronica aquatica folio subrotundo Moris. bis. Veronica becabunga Lin.* Brooklime; the leaves [L.]

This is a low plant, common in little rivulets and ditches of standing water. The leaves remain all the winter, but are in greatest perfection in the spring. Their prevailing taste is an herbaceous one, accompanied with a very light bitterness.

Becabunga has been supposed to have a saponaceous detergent virtue, and to attenuate viscid humours without pungency or irritation: hence it has been directed in the species of scurvy called hot, where the *cochlearia*, and other acrid antiscorbutics, were supposed to be less proper. It is now used only in composition with those plants, as in the *fucci scorbutici* [L.] but does not perhaps add much to their efficacy. If any virtue is expected from becabunga, it should be used as food.

BELLADONA [E.] vide *Solanum lethale*.

BELLIDIS MAJORIS folia: *Bellidis majoris sylvestris caule folioso C. B. Chrysanthemi leucanthemi Lin.* Greater or ox-eye daisy; the leaves.

This plant is frequent in fields, and among corn, flowering in May and June. The leaves have a mucilaginous, subsaline, roughish taste. They are said to be detergent, resolvent, aperient, and also moderately astringent. Geoffroy relates, that the herb, gathered before the flowers have come forth, and boiled in water, imparts an acrid taste, penetrating and subtile like pepper; and that this decoction is an excellent vulnerary and diuretic: but this

account seems to belong more properly to the following plant.

BELLIDIS MINORIS five *consolida minima folia: Bellidis minoris sylvestris C. B. Bellidis perennis Lin.* Common daisy; the leaves. - This is common almost every where, and flowers early in the spring.—The leaves have a subtile subacid taste, and are recommended as vulneraries, and in asthmas and hectic fevers, and such disorders as are occasioned by drinking cold liquors when the body has been much heated. Ludovici prefers the *bellidis minor* to the plants commonly used as antiscorbutics, and resolvents of coagulated blood in hypochondriacal disorders.

BENZOINUM [L. E.] Benzoin.

Benzoin is a concrete resinous juice, obtained from a large tree (*Terminalia benzoin Lin.*) growing naturally in both the Indies, and hardy enough to bear the winters of our own climate. The resin is brought from the East-Indies only; in large masses composed of white and light brown pieces, or yellowish specks, breaking very easily betwixt the hands: such as is whitest, and free from impurities, is most esteemed.

This resin has very little taste, impressing only a light sweetness on the tongue: its smell is extremely fragrant and agreeable, especially when heated. Committed to the fire in proper vessels, it yields a considerable quantity of a white saline concrete, called *flowers*, of an acidulous taste and grateful odour, soluble in rectified spirit, and, by the assistance of heat, in water.

The principal use of benzoin is in perfumes, and as a cosmetic: it is rarely met with in extemporaneous prescription, and enters in substance

stance only one officinal composition, the *balsamum traumaticum*, designed chiefly for external use. It should nevertheless seem applicable to other purposes, and to have no ill title to the virtues of storax and balsam of Tolu, at least in a subordinate degree. The flowers are recommended in disorders of the breast; and in this intention they are made an ingredient in the *paregoric elixir* [L. E.] and in the *troches of sulphur* [E.]

BERBERIS, seu *oxycantha* Galeni, cortex et fructus: *Berberis dumetorum* C. B. *Berberis vulgaris* Lin. Barberry; the bark and fruit.

The barberry is a small tree, or rather a large bush, covered with an ash-coloured bark, under which is contained another of a deep yellow: the berries are of an elegant red colour, and contain each two hard brown seeds. It grows wild on chalky hills in several parts of England; and is frequently planted in hedges and in gardens.

The outward bark of the branches, and the leaves, has an astringent acid taste; the inner yellow bark, a bitter one; this last is said to be serviceable in the jaundice; and by some, to be an useful purgative.

The berries, which to the taste are gratefully acid, and moderately restraining, have been given with good success in bilious fluxes, and diseases proceeding from heat, acrimony, or thinness of the juices. Among the Egyptians, barberries are employed in fluxes, and in malignant fevers, for abating heat, quenching thirst, raising the strength, and preventing putrefaction; the fruit is macerated for a day and night, in about twelve times its quantity of water, with the addition of a little fennel seed, or the like, to prevent offence to the stomach; the

liquor strained off, and sweetened with sugar, or syrup of citrons, is given the patient liberally to drink. Prosper Alpinus (from whose treatise *De medicina Egyptiorum* this account is extracted) informs us, that he took this medicine himself, with happy success, in a pestilential fever accompanied with an immoderate bilious diarrhoea.

BETÆ folia: *Betæ alba vel paleolensis quæ sicula et cicla officinarum* Mor. et *Betæ rubra vulgaris* C. B. et *Betæ rubra radice rapæ* C. B. *Betæ vulgaris* Lin. White and red beets; and the turnep-rooted red beet, or beetrave.

These plants are cultivated in gardens chiefly for culinary use. The eye distinguishes little other difference betwixt them, than that expressed in their titles. Decoctions of beets gently loosen the belly; hence they have been ranked among the emollient herbs; the plants remaining after the boiling are supposed to have rather a contrary effect. They afford little nourishment, and are said by some to be prejudicial to the stomach. The juice expressed from the roots is a powerful errhine.

BETONICÆ folia: *Betonica purpurea* C. B. *Betonica officinalis* Lin. Common or wood betony; the leaves.

Betony is a low plant, growing in woods and shady places, in several parts of England; the flowers come forth in June and July; they are of a purplish colour, and stand in spikes on the tops of the stalks. The leaves and flowers have an herbaceous, roughish, somewhat bitterish taste, accompanied with a very weak aromatic flavour. This herb has long been a favourite among writers on the materia medica, who have not been wanting to attribute

to it abundance of good qualities. Experience does not discover any other virtue in betony than that of a mild corroborant; as such, an infusion or light decoction of it may be drank as tea, or a saturated tincture in rectified spirit given in suitable doses, in laxity and debility of the viscera, and disorders proceeding from thence. The powder of the leaves, snuffed up the nose, provokes sneezing; and hence betony is sometimes made an ingredient in sternutatory powders: this effect does not seem to be owing, as is generally supposed, to any peculiar stimulating quality in the herb, but to the rough hairs which the leaves are covered with. The roots of this plant differ greatly in quality from the other parts: their taste is bitter and very nauseous: taken in a small dose, they vomit and purge violently, and are supposed to have somewhat in common with the roots of hellebore. It is pretty singular, if true, that betony affects those who gather any considerable quantity of it, with a disorder resembling drunkenness; as affirmed by Simon Paulli and Bartholinus.

BETONICA AQUATICA,
vide **SCROPHULARIA AQUATICA MAJOR**.

BETONICA PAULI, vide **VERONICA MAS**.

BETULÆ cortex et lachryma:
Betula C.B. Betula albæ Lin. The birch tree; the bark and sap.

This tree grows wild in moist woods: its bark consists of a thick brittle substance of a brownish red colour; and of several very thin, smooth, white, transparent membranes. These last are highly inflammable, and appear to abound with resinous matter, though scarcely of any particular smell or taste:

the thick brittle part is less resinous, and in taste roughish; of the medicinal virtues of either, little or nothing is known with certainty.

Upon deeply wounding or boring the trunk of the tree in the beginning of spring, a sweetish juice issues forth, sometimes, as is said, in so large quantity, as to equal in weight the whole tree and root: one branch will bleed a gallon or more in a day. This juice is chiefly recommended in scorbutic disorders, and other foulnesses of the blood; its most sensible effect is to promote the urinary discharge.

BEZOAR lapis. Bezoar stone.

The bezoar stone is a calculous concretion found in the stomach of certain animals which are said to be of the goat kind. It is composed of concentrical coats surrounding one another, with a little cavity in the middle, containing a bit of wood, straw, hair, or the like substances.

The shops distinguish two sorts of bezoar, one brought from Persia and the east-Indies, the other from the Spanish West-Indies. The first, or best sort, called oriental bezoar, is of a shining dark green or olive colour, and an even smooth surface; on removing the outward coat, that which lies underneath it appears likewise smooth and shining. The occidental has a rough surface, and less of a green colour than the foregoing: it is likewise much heavier, more brittle, and of a looser texture; the coats are thicker, and on breaking exhibit a number of striæ curiously interwoven. The oriental is generally less than a walnut; the occidental for the most part larger, and sometimes as big as a goose egg. The first is universally most esteemed, and is the only sort now retained by the London college.

Kämpfer (in whose *Amœnitates exoticæ*,

exotica, a full account of the bezoar animal may be seen) informs us, that this stone is in high esteem among the Persians, and even of greater value than in Europe; this, with sundry other circumstances needless to relate here, has given occasion to many to suspect, that the true bezoar is never brought to us. Some authors relate with great confidence, that all the stones commonly sold under this name are artificial compositions. That some of them are so, is evident; hence the great differences in the accounts which different persons have given of their qualities: the stones examined by Slare as oriental bezoar did not dissolve in acids; those which Grew and Boyle made trial of did: those employed by Geoffroy (in some experiments related in the French memoirs 1710) did not seem to be acted on by rectified spirit; whilst some of those examined by Neumann at Berlin almost totally dissolved therein. The common mark of the goodness of this stone, is its striking a deep green colour on white paper that has been rubbed with chalk.

Bezoar was not known to the ancient Greeks; and is first taken notice of by the Arabians, who extol it in a great variety of disorders, particularly against poisons. Later writers also bestow extraordinary commendations on it as a sudorific and alexipharmac; virtues to which it certainly has no pretence. It is a morbid concretion, much of the same nature with the human calculus, of no smell or taste, not digestible in the stomach of the animal in which it is found, and scarce capable of being acted on by any of the juices of the human body. It cannot be considered in any other light than as an absorbent; and is much the weakest of all the common substances of that class. It has been

given to half a dram, and sometimes a whole dram, without any sensible effect; though the general dose (on account of its great price) is only a few grains.

BISMALVA, vide **ALTHÆA**.

BISMUTHUM, Bismuth.

Bismuth is a ponderous brittle metal, resembling in appearance the antimonial regulus and zinc, but greatly differing from them in quality. It dissolves with vehemence in the nitrous acid, which only corrodes the regulus of antimony; and is scarce at all soluble in the marine acid, which acts strongly on zinc. A calx and flowers of this semimetal have been recommended as similar in virtue to certain antimonial preparations; but are at present of no other use than as a pigment or cosmetic.

BISTORTÆ radix: *Bistorta majoris radice minus intorta C. B. Polygoni bistortæ Lin.* Bistort, or snakeweed; the root [L. E.]

This plant grows wild in moist meadows in several parts of England, but is not very common about London. The root is about the thickness of the little finger, of a blackish brown colour on the outside, and reddish within: it is writhed or bent vermicularly (whence the name of the plant) with a joint at each bending, and full of bushy fibres; the root of the species here intended has, for the most part, only one or two bendings; others have three or more.

All the parts of bistort have a rough austere taste, particularly the root, which is one of the strongest of the vegetable astringents. It is employed in all kinds of immoderate hæmorrhagies and other fluxes, both internally and externally, where astringency is the only indication.

cation. It is certainly a very powerful styptic, and is to be looked on simply as such; the sudorific, antipestilential, and other like virtues attributed to it, it has no other claim to, than in consequence of its astringency, and of the antiseptic power which it has in common with other vegetable styptics. The largest dose of the root in powder is one dram. It enters only one officinal composition, the *species e scordio* [L.]

BITUMEN JUDAICUM [L.]

Asphaltus. Jews pitch.

This is a light, solid bitumen, of a dusky colour on the outside, and a deep shining black within; of very little taste, and scarcely any smell, unless heated, when it emits a strong pitchy one. It is found plentifully in the earth in several parts of Egypt, and on the surface of the Dead Sea; but is very rarely brought to us. In its room, the shops employ other bituminous substances found in France, Germany, and Switzerland: these have a much stronger pitchy smell; but in other respects agree pretty much with the true asphaltus. Sometimes pitch itself, or the caput mortuum remaining after the distillation of amber, are substituted. Abundance of virtues are attributed to this bitumen, as resolvent, discutient, glutinant, sudorific, emollient, emmenagogue, &c. but it has not for a long time been any otherwise used than as an ingredient in theriaca.

BOLL. Boles are viscid clayey earths, less coherent and more friable than clay strictly so called, more readily uniting with water, and more freely subsiding from it. They are soft and unctuous to the touch, adhere to the tongue, and by degrees melt in the mouth, impressing a light sense of astringency. A great variety of these kinds of earths have

been introduced into medicine; the principal of which are the following.

(1) **BOLUS ARMENA.** Armenian bole, or bole-armenic [L.] Pure Armenian bole is of a bright red colour, with a tinge of yellow: it is one of the hardest and most compact of the bodies of this class; and not smooth or glossy like the others, but generally of a rough dusty surface. It raises no effervescence with acids.

(2) **BOLUS GALLICA.** French bole [L. E.] The common French bole is of a pale red colour, variegated with irregular specks or veins of white and yellow. It is much softer than the foregoing; and slightly effervesces with acids.

(3) **BOLUS BLESENSIS.** Bole of Blois. This is a yellow bole, remarkably lighter than the former, and than most of the other yellow earths. It effervesces strongly with acids.

(4) **BOLUS BOHEMICA.** Bohemian bole. This is of a yellow colour, with a cast of red, generally of a flaky texture. It is not acted on by acids.

(5) **TERRA LEMNIA.** Lemnian earth. This is a pale red earth; slightly effervescing with acids.

(6) **TERRA SILESIACA.** Silesian earth, is of a brownish yellow colour: acids have no sensible effect upon it. These and other earths, made into little masses, and stamped with certain impressions, are called *terra sigillata*.

The boles of Armenia and Blois, and the Lemnian earth, are rarely met with genuine in the shops; the coarser

coarser boles, or white clay coloured with ochre, caput mortuum of vitriol, &c. frequently supply their place. The genuine may be distinguished by their subsiding uniformly from water, without any separation of their parts; the genuine yellow boles retain their colour, or have it deepened, in the fire; whilst the counterfeit forts burn red.

These earths have been recommended as astringent, sudorific, and alexipharmac; in diarrhœas, dysenteries, hæmorrhagies, and in malignant and pestilential distempers. In intestinal fluxes, and complaints in the first passages from thin acrimonious humours, they may, doubtless, be of some use; but the virtues ascribed to them in the other cases appear to have no foundation.

In the London pharmacopœia bole is an ingredient in the *pulvis e bolo, e scordio, tabellæ cardialgica, theriaca*, and in one composition for external use, viz. the *lapis medicamentosus*. No earth of this kind is employed in any of the compositions of the Edinburgh pharmacopœia, 'and the present practice hardly takes any notice of them.'

BOMBYX, vide SERICUM.

BONI HENRICI, five *lapathi unctuosi*, *folia: Lapathi unctuosi olidi perennis spinachiæ facie Moris. Chenopodii boni Henrici Lin.* English herb mercury; the leaves.

This herb is met with by roadsides, and in uncultivated places. It is ranked among the emollient herbs, but rarely made use of in practice. The leaves are applied by the common people for healing slight wounds, cleansing old ulcers, and other like purposes.

BORAGINIS *flores: Boraginis flore cæruleo J. B. Boraginis officinalis Lin.* Borage; the flowers.

This is a rough plant, clothed with small prickly hairs: it grows wild in waste places, and upon old walls. An exhilarating virtue has been attributed to the flowers of borage, which are hence ranked among the so called cordial flowers; but they appear to have very little claim to any virtue of this kind, and seem to be altogether insignificant.

BORAX [*L. E.*] Tincar, or Borax.

This is a saline substance, brought from the East-Indies in great masses, composed partly of large crystals, but chiefly of smaller ones, partly white and partly green, joined together as it were by a greasy yellow substance, intermingled with sand, small stones, and other impurities: the purer crystals, exposed to the fire, melt into a kind of glass, which is nevertheless dissoluble in water.

This salt, dissolved and crystallized, forms small transparent masses: the refiners have a method of shooting it into larger crystals; but these differ in several respects from the genuine salt, insomuch that Cramer calls them not a purified, but adulterated borax. Experiments have clearly shown, that it consists of a fixt alkaline salt, the same with the basis of sea salt, in some degree neutralized by a peculiar acid.

The medical virtues of borax have not been sufficiently ascertained by experience: it is supposed to be, in doses of half a dram or two scruples, diuretic, emmenagogue, and a promoter of delivery. Mr Bisset, in an essay on the medical constitution of Great Britain, recommends a solution of this salt in water as the most powerful dissolvent yet known of apthous crusts in the mouth and fauces of children. There are strong reasons to believe, that the virtues of borax are much greater than they are

are in general supposed to be. See Part I.

BOTRYOS folia: *Chenopodii ambrosioidis folio sinuato* Tourn. *Atriplicis odora seu suaveolentis* Moris. *Chenopodii botryes* Lin. Jerusalem oak; the leaves.

This plant is cultivated in gardens. It has a strong not disagreeable smell, and a warm somewhat pungent taste. It is recommended as a carminative pectoral. Infusions of it may be drank as tea.

BRASSICA SATIVA: *Brassica capitata alba* C. B. et *Brassica capitata rubra* C. B. et *Brassica rubra* C. B. et *Brassica alba capite oblongo non penitus clauso* C. B. *Brassica subauda* Ger. et Park. et *Brassica cauliflora* C. B. *Brassica oleracea* Lin. White and red cabbages, coleworts, Savoy cabbages, and cauliflower.

These are cultivated in gardens rather for culinary than medicinal use. They are all supposed to be hard of digestion, to afford little nourishment, and to produce flatulencies; though probably on no very good foundation. They tend strongly to putrefaction, and run into this state sooner than almost any other vegetable; when putrefied, their smell is likewise the most offensive, greatly resembling that of putrefied animal substances. A decoction of them is said to loosen the belly. Of all these plants, cauliflower is reckoned the easiest of digestion. The white is the most fetid; and the red most emollient or laxative: a decoction of this last is recommended for softening acrimonious humours in some disorders of the breast, and in hoarseness.

Sliced cabbage casked up with salt, &c. becomes sour, keeps long, is used in Germany at table under the name of sourcroust, and in the

army and navy as an antiscorbutic.

BRASSICÆ MARINÆ seu *soldanella folia: Convolvuli maritimi soldanella dicti* Raii, *Convolvuli soldanellæ* Lin. Sea coleworts, Scotch scurvygrass, or soldanella; the leaves.

This is a trailing plant, growing on the sea beach in many parts of the north of England. The roots, leaves, and stalks, yield a milky juice.

Soldanella is a strong cathartic, operating very churlishly, and hence deservedly rejected from practice. Those who recommend its use differ considerably with regard to the dose; some direct half a dram, others three drams, and others a whole handful.

BRITANNICA, vide **LAPATHUM,**

BRUNELLA, vide **PRUNELLA.**

BRUSCUS, vide **RUSCUS.**

BRYONIÆ ALBÆ radix: *Bryoniæ asperæ sive albæ baccis rubris* C. B. *Bryoniæ albæ* Lin. White bryony, or wild vine; the roots [E.]

This is a rough plant, growing on dry banks under hedges, and climbing upon the bushes. The roots are large, sometimes as thick as a man's thigh; their smell, when fresh, is strong and disagreeable; the taste nauseously bitter, acrid, and biting: the juice is so sharp, as in a little time to excoriate the skin: in drying, they lose great part of their acrimony, and almost the whole of their scent.

Bryony root is a strong irritating cathartic; and as such has sometimes been successfully exhibited in maniacal cases, in some kinds of dropsies,

sies, and in several chronical disorders, where a quick solution of viscid juices, and a sudden stimulus on the solids, were required. An extract prepared by water, acts more mildly and with greater safety than the root in substance; given from half a dram to a dram, it is said to prove a gentle purgative, and likewise to operate powerfully by urine.

Bryony root, applied externally, is said to be a powerful discutient.

BUFO. The toad.

This animal has been generally looked upon as poisonous, particularly its saliva, and a certain acrid liquor, supposed to be the urine, which it throws out, when irritated, to a considerable distance. It was first introduced into medicine upon occasion of a cure performed on a hydropic person, to whom powdered toads were given in order to dispatch him, but who voided a large quantity of urine after taking them, and soon recovered of his disorder: since this time, the toad, dried by a gentle heat and pulverized, has been greatly esteemed as a diuretic. This preparation is said likewise, applied externally to the navel, to restrain hæmorrhagies, particularly those from the uterus.

BUGLOSSI *radix, folia, flores:* *Buglossi angustifolii majoris C. B. Anchusa officinalis Lin.* Garden bugloss; the roots, leaves, and flowers.

This is a rough, hairy plant, resembling borage, but less prickly: a wild sort is commonly met with in hedges and among corn, which differs from the garden only in being smaller. Bugloss has a slimy sweetish taste, accompanied with a kind of coolness: the roots are the most glutinous, and the flowers the least so. These qualities point out its use in hot bilious or inflammatory di-

stempers, and a thin acrimonious state of the fluids. The flowers are one of the four called cordial flowers: the only quality they have that can entitle them to this appellation, is, that they moderately cool and soften, without offending the palate or stomach; and thus, in warm climates, or in hot diseases, may in some measure refresh the patient.

BUGULÆ *five consolidæ mediæ folia:* *Bugula sylvestica vulgaris cærulea Morrison, Ajuga reptantis Lin.* Bugle or middle consoud; the leaves.

This grows wild in woods, hedges, and moist meadows. The leaves have at first a sweetish taste, which gradually becomes bitterish and roughish. They are recommended as vulnerary medicines, and in all cases where mild astringents or corroborants are proper.

BUNIAS, vide NAPUS.

BURSÆ PASTORIS *folia:* *Thlaspi sativi, bursæ pastoris dicti, Raii; Thlaspi bursæ pastoris Lin.* Shepherdspurse; the leaves.

This plant is common in waste places; and is found in flower all the summer. Shepherdspurse has long been celebrated as an astringent, and strongly recommended in diarrhœas, dysenteries, uterine fluors, and in general in all diseases where astringents of any kind can avail. Some have esteemed it so powerful a styptic, as scarce to be safely exhibited internally. Others have thought it to be of a hot fiery nature, and supposed it to stop fluxes and hæmorrhagies, by coagulating the juices like alcohol, and burning or searing the orifices of the vessels. The sensible qualities of shepherdspurse discover little foundation for either of these opinions; it has no perceptible heat, acrimony, pungency,

gency, and scarcely any astringency: the taste is almost merely herbaceous, so as sufficiently to warrant the epithet given this plant by Mr Ray, *Fatuum*.

BUXI lignum: *Buxi arborecentis C.B. Buxi sempervirentis Lin.* The box tree; the leaves and wood [L.]

The box is a small tree, growing wild in some parts of Kent and Surrey. The wood is of a yellow colour, more solid, compact, and ponderous than any other of the European woods. The leaves have a strong nauseous taste, and, when fresh, a fetid smell: they are said to purge violently, in the dose of a dram. A decoction of the wood is recommended by some as powerfully sudorific, preferable even to guaiacum: but the taste readily discovers that it wants the qualities of that wood. Neither the wood nor leaves of the box tree are at present employed for any other medicinal purpose than for the distillation of an empyreumatic oil [L.]; and an oil of nearly the same quality is obtainable by the same treatment from almost all woods.

CACAO [E.] Chocolate nuts.

These are the fruit of an American tree resembling the almond, *Theobroma cacao Lin.* The principal use of these nuts is for the preparation of the dietetic liquor chocolate. This is a mild, unctuous, nutritious fluid, capable of softening acrimonious humours, and of great service in consumptive disorders; especially if made with milk, and with only a small proportion of aromatics.

CALAMINARIS LAPIS [L. E.] Calamy or calamine stone.

This mineral is found plentifully in England, Germany, and other countries, either in distinct mines, or intermingled with the ores of dif-

ferent metals. It is usually of a greyish, brownish, yellowish, or pale reddish colour; considerably hard, though not sufficiently so to strike fire with steel. It has been looked upon by some as a simple earth, by others as an iron ore; later experiments have discovered it to be an ore of zinc. Calamine is generally roasted or calcined before it comes into the shops, in order to separate some sulphureous or arsenical matter which the crude mineral is supposed to contain, and to render it more easily reducible into a fine powder. In this state, it is employed in collyria against defluxions of thin acrid humours upon the eyes; for drying up moist, running ulcers; and healing excoriations. It is the basis of an officinal *epulotic cerate*.

CALAMINTHÆ folia: *Calaminthæ pulegii odore seu nepetæ C.B. Calaminthæ foliis ovatis, obtusis, caule procumbente Halleri; Melissa nepetæ Lin.* Field calamint; the leaves [L.]

This is a low plant, growing wild about hedges and highways, and in dry sandy soils. The leaves have a quick warm taste, and smell strongly of pennyroyal: as medicines, they differ little otherwise from spearmint, than in being somewhat hotter, and of a less pleasant odour; which last circumstance has procured calamint the preference in hysteric cases.

CALAMINTHÆ MONTANÆ folia: *Calaminthæ flore magno vulgaris J.B. Melissa calaminthæ Lin.* Common calamint; the leaves.

This plant, notwithstanding its name, is, among us, much less common than the former, which has generally supplied its place in the markets: hence the London college have now dropt this *montana*, and received the other. The *calamintha*
mon-

montana is also less efficacious than the foregoing sort: the taste is weaker; the smell approaches to that of the wild mints, without any thing of the strong pennyroyal flavour of the other.

CALAMI AROMATICI radix: *Acori veri sive calami aromatici officinarum* C. B. *Acori calami* Lin. Sweet-scented flag; the roots [L. E.]

This flag resembles, as to its leaves, the common *iris*; but in other respects differs greatly from it: the stalk grows at a little distance from the leaves; the lower half, up to where the flowers come forth, is roundish; the part above this, broad like the other leaves; the flowers are very small, whitish, and stand in a kind of head about the size of a finger. This plant grows plentifully in rivulets and marshy places, about Norwich and other parts of this island, in the canals of Holland, in Switzerland, and in other countries of Europe. The shops have been usually supplied from the Levant with dried roots, which do not appear to be superior to those of our own growth.

The root of *acorus* is full of joints, crooked, somewhat flattened on the sides, internally of a white colour, and loose spongy texture; its smell is strong; the taste warm, acrid, bitterish, and aromatic; both the smell and taste are improved by exsiccation. This root is generally looked upon as a carminative and stomachic medicine, and as such is sometimes made use of in practice. It is said by some to be superior in aromatic flavour to any other vegetable that is produced in these northern climates: but such as I have had an opportunity of examining, fell short, in this respect, of several of our common plants. It is, nevertheless, a sufficiently elegant aro-

matic. It is an ingredient in the mithridate and theriaca of the London pharmacopœia; and in the aromatic and stomachic tinctures, and compound arum powder, of the Edinburgh. The fresh root candied after the manner directed in our dispensatory for candying eryngo root, is said to be employed at Constantinople as a preservative against epidemic diseases. The leaves of this plant have a sweet fragrant smell, more agreeable, though weaker, than that of the roots.

CALENDULÆ flores: *Calendula sativæ Raii*: *Calendula flore simplici* J. B. *Calendula officinalis* Lin. Garden marigold; the flowers.

This herb is common in gardens, where it is found in flower greatest part of the summer. Marigold flowers are supposed to be aperient and attenuating; as also cardiac, alexipharmac, and sudorific: they are principally celebrated in uterine obstructions, the jaundice, and for throwing out the small-pox. Their sensible qualities give little foundation for these virtues: they have scarcely any taste, and no considerable smell. The leaves of the plant discover a viscid sweetishness accompanied with a more durable saponaceous pungency and warmth: these seem capable of answering some useful purposes, as a stimulating, aperient, antiscorbutic medicine.

CALX VIVA [L. E.] Quicklime. Quicklime is usually prepared among us, by calcining certain stones of the chalky kind. All chalks and marbles burn into quicklime; with this difference, that the more compact the stone, generally the stronger is the lime. In maritime countries, in defect of the proper stones, sea-shells are made use of, which

which afford a calx agreeing in most respects with the stone limes.

All these limes are, when fresh burnt, highly acrimonious and corrosive, 'being thus freed from fixt air.' In this state they are employed in some external applications as a depilatory; for rendering sulphur soluble in water [L.]; 'and for depriving alkalies of their fixt air, thus increasing their power,' either for the purposes of a caustic [L. E.], or to enable them more readily to dissolve oils for making soap [L.] If the lime be exposed for a length of time to the air, it 'absorbs water;' falls by degrees into a powder; and, 'attracting fixt air,' loses greatly of its acrimony.

Water poured directly upon quicklime, takes up a portion of it: the solution has a strong taste, somewhat styptic, drying the mouth, and accompanied with a kind of sweetishness. This liquor does not effervesce with acids, but is rendered 'by fixt air' turbid and milky: as it prevents the coagulation of milk, it is sometimes made use of along with milk diets: agitated with expressed oils, it unites with them into a thick compound, recommended by Dr Slaire, and much used against burns and inflammations. Both the simple solution of the lime, and the solution impregnated with other materials, are directed as officinal, under the titles of simple and compound lime-waters [L.] 'The Edinburgh college retains only the simple.'

Lime water, drank to the quantity of a quarter of a pint three or four times a-day, and continued for a length of time, has been found serviceable in scrophulous cases, and other obstinate chronic disorders. It generally promotes urine, and not unfrequently the cuticular discharge: for the most part it binds the belly, and sometimes produces troublesome costiveness, unless this

effect be occasionally provided against, by the interposition of proper medicines. It does good service in debility and laxity of the viscera in general; in those of the uterine and feminal vessels, 'as fluoralbus, chronic menorrhagia, and gleet,' it is particularly recommended. Care must be had not to use this medicine too liberally in hot bilious constitutions, or where the patient is much emaciated, or the appetite weak, or at the time of any critical or periodical evacuations. Its principal use is in cold, moist, sluggish, and corpulent habits. 'It has been used as a lithontriptic. In the form of injection, it is very effectual in killing and bringing off ascarides.'

CAMPECHENSE LIGNUM, vide LIGNUM CAMPECHENSE.

CAMPORA [L. E.] Camphor is a solid concrete, extracted from the wood and roots of a tree (*Laurus camphora* Lin.) growing in Sumatra and Japan. 'The former is by much the best.' As it first sublimes from the wood, it appears brownish, composed of semipellucid grains mixed with dirt: in this state it is exported by the Dutch, and purified by a second sublimation; after which, it is reduced into loaves (in which it is brought to us) probably by fusion in close vessels; for it does not assume this form in sublimation. 'Camphor is procurable in small quantities from various other vegetables by distillation. It may be considered as a peculiar, concrete, very volatile essential oil.'

Pure camphor is very white, pellucid, somewhat unctuous to the touch; of a bitterish, aromatic, acrid taste, yet accompanied with a sense of coolness; of a smell somewhat like that of rosemary, but much stronger. It is totally volatile, and inflammable; soluble in vinous spirits,

rites, oils, and the mineral acids; not in water, alkaline liquors, or the acids of the vegetable kingdom. This concrete is esteemed one of the most efficacious diaphoretics; and has long been celebrated in fevers, malignant and epidemical distempers: in deliria, where opiates fail of procuring sleep, and oftentimes aggravate the symptoms, this medicine frequently succeeds.

‘The late Mr Alexander of Edinburgh, on taking a scruple of camphor, found his pulse somewhat less frequent: on taking two, his pulse fell from 77 to 70, but returned to 77 in less than half an hour; at which time vertigo and a gradual abolition of consciousness came on, succeeded by violent retchings, convulsions, and mania, the pulse rising to 100. He then began to recover his recollection, felt extremely hot, with tremors of the whole body. By using warm water he threw up the camphor, the effects of which gradually wore off, only he felt his body for two days very sore and rigid.’

Frederick Hoffman has wrote an express dissertation *De Camphora usu interno securissimo et praestantissimo*. The substance of his observation is, that camphor seems to penetrate very quickly through the whole body, and notably increase perspiration: that though given to the quantity of half a dram, dissolved in spirit of wine, and duly diluted, it does not raise the pulse, or occasion any heat, but rather causes a sense of coolness about the praecordia: that on continuing its use for some time, the blood became sensibly more fluid, and the quantity of watery serum, which the habit before abounded with, was notably diminished: that in malignant fevers, and all disorders, whether acute or chronical, proceeding from an acrid or putrescent state of the juices,

camphor has excellent effects, correcting the acrimony, expelling the putrid morbid matter through the cutaneous pores, and preventing an inflammation of sphacelus, where there is previously any disposition thereto: that, by strengthening the vessels, it restrains hæmorrhagies happening in acute fevers, and promotes critical and periodical evacuations: that it expels even the venereal virus; that he has known examples of the lues being cured by camphor alone, a purgative only being premised; and that in recent infections he has found no medicine equal to it in efficacy. In inflammatory cases, where there is a tendency to mortification, intense heat, thirst, or where the skin is dry and parched, whether before or after a delirium has come on, small doses of camphor joined with nitre produced happy effects, almost immediately relieving the symptoms, occasioning a calm sleep and plentiful sweat, without fatiguing the patient. He farther observes, that this simple, by its antiphlogistic quality, prevents the ill effects of the more irritating medicines; that cantharides, and the acrid stimulating cathartics and diuretics, by the admixture of a small proportion of camphor, become much more mild and safe in operation.

The common dose of camphor is from one grain to ten. Its official preparations are, a julep [L.] for internal use; and a solution in rectified spirit [L. E.] and in expressed oil [E.] for external applications. It is an ingredient also in the paregoric elixir, camphorated vitriolic water, camphorated white ointment, and saponaceous liniment [L.], ‘saponaceous and anodyne liniments [E.]’

‘In modern practice, it is externally employed chiefly to diminish inflammation, to discuss tumor, to

obviate gangrene, to stimulate in local palsy, and to allay rheumatic and paralytic pains. Internally, it is given in nervous affections, with a view of exciting the vis vitæ and alleviating spasmodic complaints: with the same view to the vis vitæ, to obviate putrescence, and to procure sleep, it is used in fevers of the typhous kind. Some recommend it as singularly useful in cases of ardor urinæ; and others find it efficacious in what are called nervous head-achs.

CANCORUM CHELÆ [L.]

Crabs claws: the black tips of the claws of the common sea crab, or *cancer marinus*.

CANCORUM OCULI dicti

[L.E.] Crabs eyes so called: stony concretions found in the head, or rather stomach, of the *astacus fluviatilis*, (*Cancer astacus* Lin.) or craw fish.

The only virtue of these simples is to absorb acidities in the primæ viæ. The claws enter an officinal lozenge, and give name to a powder, for this intention. They are ingredients also in some other officinal compositions, in which they do not seem to be of much advantage: viz. the compound arum powder, contrayerva powder, and cordial confection.

Crabs eyes are said by most writers on the materia medica to be frequently counterfeited with tobacco-pipe clay, or compositions of chalk with mucilaginous substances. This piece of fraud, if really practised, may be very easily discovered; the counterfeits wanting the leafy texture which is observed upon breaking the genuine; more readily imbibing water: adhering to the tongue; and dissolving in vinegar, or the stronger acids diluted with water, either entirely, or not at all,

or by piecemeal; whilst the true crabs eyes, digested in these liquors, become soft and transparent, their original form remaining the same: this change is owing to the earthy part, on which depended their opacity and hardness, being dissolved by the gentle action of the acid, which leaves the conglutinating matter unhurt.

CANELLA ALBA: *Cinnamomum sive canella tubis minoribus alba* C. B. *Canella alba*.

This is a bark rolled up into long quills, thicker than cinnamon, and both outwardly and inwardly of a whitish colour, lightly inclining to yellow. It is the produce of a tall tree growing in great plenty in the low lands in Jamaica, and other American islands, called by Sir Hans Sloane *arbor baccifera laurifolia aromatica, fructu viridi calyculato racemoso; Winterania canella* Lin. The canella is the interior bark, freed from an outward thin rough one, and dried in the shade. The shops distinguish two sorts of canella, differing from one another in the length and thickness of the quills; they are both the bark of the same tree, the thicker being taken from the trunk, and the thinner from the branches. This bark is a warm pungent aromatic, not of the most agreeable kind: nor are any of the preparations of it very grateful. It is lately sometimes met with in extemporaneous prescription, and is an ingredient in the officinal *hiera picra* and *tinctura sacra* [L.], and in the *vinum amarum*, or *tinct. ad stomachicos*, *vinum rhei*, and the *tinctura amara*, or *elixir stomachicum*. [E.]

CANNABIS semen: *Cannabis sativa* C. B. & Lin. Hemp; the seed.

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This plant, when fresh, has a rank narcotic smell: the water in which the stalks are soaked, in order to facilitate the separation of the tough rind for mechanic uses, is said to be violently poisonous, and to produce its effects almost as soon as drank. The seeds also have some smell of the herb; their taste is unctuous and sweetish; on expression they yield a considerable quantity of insipid oil; hence they are recommended (boiled in milk, or triturated with water into an emulsion) against coughs, heat of urine, and the like. They are also said to be useful in incontinence of urine, and for restraining venereal appetites; but experience does not warrant their having any virtues of this kind.

CANTHARIDES, *Meloe vesicatorius* Lin. [L. E.] Spanish flies. These insects are of a shining green colour, intermingled with more or less of a blue and a gold yellow. They are found adhering to different kinds of trees and herbs, in Spain, Italy, and France; the largest come from Italy, 'but the smaller kind from Spain are preferred.'

Cantharides are extremely acrimonious; applied to the skin, they first inflame, and afterwards excoriate the part, raising a more perfect blister than any of the vegetable acids, and occasioning a more plentiful discharge of serum. Even the external application of cantharides is often followed by a strangury, accompanied with thirst and feverish heat: this inconvenience may be remedied by soft unctuous or mucilaginous liquors liberally drank. 'The strangury is probably owing to the action of the absorbed active parts on the neck of the bladder.'

Cantharides taken internally, often occasion a discharge of blood by urine, with exquisite pain: if the dose is considerable, they seem to in-

flame and exulcerate the whole intestinal canal; the stools become mucous and purulent; the breath fetid and cadaverous; intense pains are felt in the lower belly; the patient faints, grows giddy, raving mad, and dies. All these terrible consequences have sometimes happened from a few grains. Herman relates, that he has known a quarter of a grain inflame the kidneys, and occasion bloody urine with violent pain. There are nevertheless cases in which this stimulating fly, given in larger doses, proves not only safe but of singular efficacy for the cure of diseases that yield little to medicines of a milder class. In cold phlegmatic sluggish habits, where the viscera are overloaded, and the kidneys and ureters obstructed with thick viscid mucous matter, cantharides have excellent effects: here the abounding mucus defends the solids from the acrimony of the fly, till it is itself expelled; when the medicine ought to be discontinued. Groenvelt employed cantharides with great success in dropries, obstinate suppressions of urine, and ulcerations of the bladder; giving very considerable doses made into boluses with camphor; and interposing large draughts of emulsions, milk, or other emollient liquids; by this means the excessive irritation which they would otherwise have occasioned, was in great measure prevented. The camphor did not perhaps contribute so much to this effect as is generally imagined; since it has no sensible quality that promises any considerable abatement of the acrimony of cantharides: nitre would answer all that the camphor is supposed to perform: this, with milk, or emollient mucilaginous liquors, drank in large quantity, are the best correctors. Cantharides, in very small doses, may be given with safety also in other cases. Dr Mead observes, that

the obstinate gleetings which frequently remain after the cure of venereal maladies, and which rarely yield to balsamic medicines, are effectually remedied by cantharides; and that no one remedy is more efficacious in leprous disorders; in which last, proper purgatives are to be occasionally taken during the use of the cantharides. The best and safest preparation of cantharides for these purposes, is a spirituous tincture [L. E.]; and indeed in all cases the tincture is far preferable, for internal use, to the fly in substance.

On an idea of the stimulus accumulated about the genital organs being propagated to parts in the neighbourhood, the internal use of the tincture has also been recommended in diabetes, leucorrhœa, amenorrhœa, &c. but from the dangerous effects sometimes observed from seemingly inconsiderable doses, cantharides are now almost entirely confined to external application.

They are sometimes used as merely rubefacient, as in friction, with the tincture in indolent swellings, or in form of weak plaster, but most commonly in form of full blister, chiefly with a view of relieving torpor, of determining the impetus of the blood from the part affected to the part of application, of discharging serum, and of relieving spasms in certain internal parts.

The virtues of cantharides are extracted by rectified spirit of wine, proof spirit, and water; but do not arise in distillation. The watery and spirituous extracts blister as freely as the fly in substance; whilst the fly remaining after the several menstrua have performed their office, is to the taste insipid, and does not in the least blister, or inflame the skin, hence the *unguentum ex infuso cantharidum* [E.]

CAPILLUS VENERIS, vide ADIANTHUM.

CAPPARIS *radicis cortex, et florum gemma: Capparis spinosa fructu minore, folio rotundo* C. B. *Capparis spinosa* Lin. Caper bush; the bark of the root, and buds of the flowers.

This is a low prickly bush, found wild in Italy and other countries; it is raised with us by sowing the seeds upon old walls, where they take root betwixt the bricks, and endure for many years.

The bark of the root is pretty thick, of an ash colour, with several transverse wrinkles on the surface; cut in slices and laid to dry, it rolls up into quills. This bark has a bitterish acrid taste; it is reckoned aperient and diuretic; and recommended in several chronic disorders, for opening obstructions of the viscera.

The buds, pickled with vinegar, &c. are used at table. They are supposed to excite appetite, and promote digestion; and to be particularly useful, as detergents and aperients, in obstructions of the liver and spleen. Their taste and virtues depend more upon the saline matter introduced into them, than on the caper buds.

CAPRIFOLII *folia et flores: Periclymeni non persoliati Germanici* C. B. *Lonicera periclymeni* Lin. Woodbind, or honeysuckle; the leaves and flowers.

This is a climbing shrub, common in hedges; the beauty of its flowers has gained it a place also in gardens. The leaves have a disagreeable smell; the flowers a very pleasant one; the taste of both is herbaceous and roughish. They are said to be diuretic and aperient; but practice has not for a long time paid any regard to them.

CAPSICUM, vide PIPER INDICUM.

CARABE, vide SUCCINUM.

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CARANNA; Caranna.

This is a resinous substance brought from New Spain, and other parts of America, in little masses, rolled up in leaves of flags: it is said to exude from a species of palm-tree. This resin is very rarely made use of in medicine, or met with in the shops; whence the London and Edinburgh colleges have rejected it from their catalogue.

'CARDAMINES *petala, folia:*
Cardamines pratensis Lin. Ladies Smock, or Cuckow Flower; the petals and leaves [E.]

'It is a perennial plant, grows in meadow grounds, sends forth purplish flowers in the spring; and in its sensible qualities it resembles the *nasturtium aquaticum*. Long ago it was employed as a diuretic; and of late it has been introduced in nervous diseases, as epilepsy, hysteria, chorea, asthma, &c. A dram or two of the powder is given twice or thrice a-day. It has little sensible operation, except that it sometimes sweats.'

CARDAMOMI MAJORIS
semen Lin. Greater Cardamom seed.

The greater cardamom is a dried fruit or pod, about an inch long, containing under a thick skin two rows of small triangular seeds of a warm aromatic flavour.

CARDAMOMI MINORIS *semen; Amomi cardamomi* Lin. Lesser cardamom [L. E.]

This fruit is scarce half the length of the foregoing; the seeds are considerably stronger both in smell and taste. Hence this sort has long supplied the place of the other in the shops, and is the only one now directed.

Cardamom seeds are a very warm, grateful, pungent aromatic, and fre-

quently employed as such in practice: they are said to have this advantage, that notwithstanding their pungency, they do not, like those of the pepper kind, immoderately heat or inflame the bowels. Both water and rectified spirit extract their virtues by infusion, and elevate them in distillation; with this difference, that the tincture and distilled spirit are considerably more grateful than the infusion and distilled water: the watery infusion appears turbid and mucilaginous; the tincture made in spirit, limpid and transparent. The husks of the seeds, which have very little smell or taste, may be commodiously separated, by committing the whole to the mortar, when the seed will readily pulverize, so as to be freed from the shell by the sieve: this should not be done till just before using them; for if kept without the husks, they soon lose considerably of their flavour.—The officinal preparations of these seeds are a spirituous water and tincture: they are employed also as a spicy ingredient in several of the officinal compositions.

CARDIACÆ *folia:* *Marubii cardiacæ dicti, forte primi Theophrasti*
C. B. Leonuri cardiacæ Lin. Motherwort; the leaves.

This plant is common in waste places, and found in flower greatest part of the summer. The leaves have a bitter taste, and a pretty strong smell: they are supposed to be useful in hysteric disorders, to strengthen the stomach, to promote urine; and indeed it may be judged from their smell and taste, that their medicinal virtues are considerable, though they are now rejected both from the London and Edinburgh pharmacopœias.

CARDUI BENEDICTI *folia,*
semen: Onici sylvestris hirsutioris sive cardui

cardui benedicti C. B. *Cardui lutei procumbentis, sudorifici et amari* Moisson. *Centaurea benedictæ* Lin.

Blessed thistle; the leaves [L.] and seed [E.]

This is an annual plant, cultivated in gardens: it flowers in June and July, and perfects its seeds in the autumn. The herb should be gathered when in flower, dried in the shade, and kept in a very dry airy place, to prevent its rotting or growing mouldy, which it is very apt to do. The leaves have a penetrating bitter taste, not very strong or very durable, accompanied with an ungrateful flavour, which they are in great measure freed from by keeping. Water extracts, in a little time, even without heat, the lighter and more grateful parts of this plant; if the digestion is continued for some hours, the disagreeable parts are taken up; a strong decoction is very nauseous and offensive to the stomach. Rectified spirit gains a very pleasant bitter taste, which remains uninjured in the extract.

The virtues of this plant seem to be little known in the present practice. The nauseous decoction is sometimes used to provoke vomiting; and a strong infusion to promote the operation of other emetics. But this elegant bitter, when freed from the offensive parts of the herb, may be advantageously applied to other purposes. We have frequently experienced excellent effects from a light infusion of *carduus* in loss of appetite, where the stomach was injured by irregularities. A stronger infusion made in cold or warm water, if drank freely, and the patient kept warm, occasions a plentiful sweat, and promotes all the secretions in general.

The seeds of this plant are also considerably bitter, and have been

sometimes used in the same intention as the leaves.

CARICÆ [L. E.] Figs; the dried fruit of the *ficus communis* C. B. *Ficus carica* Lin.

The principal use of these is as a soft, emollient sweet; in this intention they enter the pectoral decoction and lenitive electuary of the shops. They are also esteemed by some as suppuratives, and hence have a place in the maturing cataplasms.

CARLINÆ, seu *Chamaeleontis albi, radix*: *Carlina acaule magno flore albo* C. B. *Carlina acaulis* Lin. Carlina thistle; the root.

This is a very prickly sort of thistle, growing spontaneously in the southern parts of France, Spain, Italy, and the mountains of Switzerland; from whence the dried roots are brought to us. This root is about an inch thick, externally of a pale rusty brown colour, corroded as it were on the surface, and perforated with numerous small holes, appearing when cut as if worm-eaten. It has a strong smell, and a subacid, bitterish, weakly aromatic taste. Carlina is looked on as a warm diaphoretic and alexipharmac; and has been for some time greatly esteemed by foreign physicians, but never came much into use among us: the present practice has entirely rejected it; nor is it often to be met with in the shops. Frederick Hoffman the elder relates, that he has observed a decoction of it in broth to occasion vomiting.

CARPOBALSAMUM: *Fructus balsami Syriaci rutæ folio* C. B. Carbobalsam.

This is the fruit of the tree (*Ammyris Gileadenfis* Lin.) that yields the opobalsam or balm of Gilead.

It is about the size of a pea, of a whitish colour, inclosed in a dark brown wrinkled bark. This fruit, when in perfection, has a pleasant warm glowing taste, and a fragrant smell, resembling that of the opobalsamum itself. It is very rarely found in the shops; and such as we now and then do meet with, has almost entirely lost its smell and taste. It is of no other use in this country than as an ingredient in the mithridate and theriaca; in both which the college directs cubebs as a substitute to it.

CARTHAMI semen: *Cartami officinarum flore croceo Tourn. Carthami tinctorii Lin.* Bastard saffron, or safflower; the seeds.

The bastard saffron is a soft kind of thistle, with only a few prickles about the edges of the leaves. It is cultivated in large quantity in some places of Germany; from whence the other parts of Europe are supplied with the flowers as a colouring drug, and the seeds as a medicinal one. The flowers, well cured, are not easily distinguishable by the eye from saffron; but their want of smell readily discovers them. The seeds are white, smooth, of an oblong roundish shape, yet with four sensible corners, about a quarter of an inch in length, so heavy as to sink in water; of a viscid sweetish taste, which in a little time becomes acrid and nauseous. These seeds have been celebrated as a cathartic: they operate very slowly, and for the most part disorder the bowels, especially when given in substance; triturated with aromatic distilled waters, they form an emulsion less offensive, yet inferior in efficacy to more common purgatives.

CARUI, carvi, seu cari, semen: *Cumini pratensis carui officinarum*

C. B. Cari carvi Lin. Caraway; the seeds [*L. E.*]

Caraway is an umbelliferous plant, cultivated with us in gardens, both for culinary and medicinal use. The seeds have an aromatic smell, and a warm pungent taste. These are in the number of the four greater hot seeds; and frequently employed as a stomachic and carminative in flatulent colics, and the like. Their officinal preparations are an essential oil and a spirituous water [*L.*]; they are ingredients also in the compound juniper water, tincture of senna, stomachic tincture, oxymel of garlic, electuary of bayberries and of scammony, philonium, and the cumminseed plaster [*L.*]

CARYOPHYLLA AROMATICA [*L. E.*] Cloves.

Cloves are the fruit of the *Caryophyllus aromaticus Lin.* growing in the East-Indies. In shape, they somewhat resemble a short thick nail.

Cloves have a very strong agreeable aromatic smell, and a bitterish pungent taste, almost burning the mouth and fauces. The Dutch, from whom we have this spice, frequently mix it with cloves which have been robbed of their oil: these, though in time they regain from the others a considerable share both of taste and smell, are easily distinguishable by their weaker flavour and lighter colour. Cloves, considered as medicines, are very hot stimulating aromatics, and possess in an eminent degree the general virtues of substances of this class. An extract made from them with rectified spirit is excessively hot and pungent; the distilled oil has no great pungency; an extract made with water is nauseous and somewhat styptic. The only officinal preparation of them is the essential oil [*L. E.*]

[L. E.] Both the cloves themselves and their oil are ingredients in many officinal compositions.

CARYOPHYLLA RUBRA:
Flores Caryophylli altilis majoris C. B.
Dianthi caryophylli Lin. Clove July-flowers [L. E.]

A great variety of these flowers are met with in our gardens: those made use of in medicine ought to be of a deep crimson colour, and a pleasant aromatic smell, somewhat like that of cloves: many sorts have scarce any smell at all. The *caryophylla rubra* are said to be cardiac and alexipharmac: Simon Paulli relates, that he has cured many malignant fevers by the use of a decoction of them; which he says powerfully promotes sweat and urine, without greatly irritating nature, and also raises the spirits and quenches thirst. At present the flowers are chiefly valued for their pleasant flavour, which is entirely lost even by light coction; hence the college direct the syrup, which is the only officinal preparation of them, to be made by infusion.

CARYOPHYLLATÆ radix:
Caryophyllatæ vulgaris flore parvo luteo J. B. *Gei urbani Lin.* Avens, or herb benet; the root.

Avens is a rough plant found wild in woods and hedges. The root has a warm, bitterish, astringent taste, and a pleasant smell, somewhat of the clove kind, especially in the spring, and when produced in dry warm soils. Parkinson observes, that such as is the growth of moist soils has nothing of this flavour. This root has been employed as a stomachic, and for strengthening the tone of the viscera in general: it is still in some esteem in foreign countries, though not taken notice of among us. It yields on distillation an ele-

gant odoriferous essential oil, which concretes into a flaky form.

CASCARILLA, vide **ELEUTHERIA.**

CASSIA FISTULARIS
[L. E.] the fruit of an oriental tree (*Cassia fistula Lin.*) resembling the walnut.

This fruit is a cylindrical pod, scarce an inch in diameter; a foot or more in length: the outside is a hard brown bark; the inside is divided by thin transverse woody plates, covered with a soft black pulp of a sweetish taste, with some degree of acrimony. There are two sorts of this drug in the shops; one brought from the East-Indies, the other from the West: the canes or pods of the latter are generally large, rough, thick-rinded, and the pulp nauseous; those of the former are less, smoother, the pulp blacker, and of a sweeter taste; this sort is preferred to the other. Such pods should be chosen as are weighty, new, and do not make a rattling noise (from the seeds being loose within them) when shaken. The pulp should be of a bright, shining black colour, and a sweet taste, not harsh (which happens from the fruit being gathered before it has grown fully ripe) or sourish (which it is apt to turn upon keeping): it should neither be too dry nor too moist, nor at all mouldy; which, from its being kept in damp cellars, or moistened, in order to increase its weight, it is very subject to be. Greatest part of the pulp dissolves both in water and in rectified spirit; and may be extracted from the cane by either. The shops employ water, boiling the bruised pod therein, and afterwards evaporating the solution to a due consistence.

The pulp of cassia is a gentle laxative

ative medicine, and frequently given, in a dose of some drams, in colic habits. Some direct a dose of two ounces or more as a cathartic, in inflammatory cases, where the more acrid purgatives have no place: but in these large quantities it generally nauseates the stomach, produces flatulencies, and sometimes gripings of the bowels, especially if the cassia is not of a very good kind; these effects may be prevented by the addition of aromatics, and exhibiting it in a liquid form. Geoffroy says, it does excellent service in the painful tension of the belly which sometimes follows the imprudent use of antimonials; and that it may be advantageously acuated with the more acrid purgatives, or antimonial emetics, or employed to abate their force. Vallisneri relates, that the purgative virtue of this medicine is remarkably promoted by manna; that a mixture of four drams of cassia, and two of manna, purges as much as twelve drams of cassia or thirty-two of manna alone. Sennerius observes, that the urine is apt to be turned of a green colour by the use of cassia: and sometimes, where a large quantity has been taken, blackish. This drug gives name to an officinal electuary, and is an ingredient also in another.

CASSIA LIGNEA: the bark of an Indian tree called by Breynius *arbor canellifera Indica, cortice acrimo viscido seu mucilaginoso, qui cassia lignea officinarum; Laurus cassia Lin. [E.]*

This bark, in appearance and aromatic flavour, approaches to cinnamon; from which it is easily distinguishable by its remarkable viscosity: chewed, it seems to dissolve in the mouth into a slimy substance; boiled in water, it gives out a strong mucilage, the aromatic part exhaling; the water obtained by distil-

lation, unless drawn with great care, has an unpleasant smell, somewhat of the empyreumatic kind: nevertheless the distilled oil proves nearly of the same quality with that of cinnamon. Cassia possesses the aromatic virtues of cinnamon; but in an inferior degree; and its effects are less durable. Its glutinous quality renders it useful in some cases where simple aromatics are less proper.

CASTOREUM [L. E.] Castor.

Castor appears to be a peculiar fatty deposition found in cells or bags situated near the rectum in the beaver, a four-footed amphibious animal (*Castor fiber Lin.*) frequent in several parts of Europe and America. 'It is also got from a few other animals.' The best comes from Russia: this is in large round hard cods, which appear, when cut, full of a brittle red liver-coloured substance, interspersed with membranes and fibres exquisitely interwoven. An inferior sort is brought from Dantzick; this is generally fat and moist. The worst of all is that of New England, which is in longish thin cods; 'but that from the Bay of Honduras is reckoned much better.'

Russia castor has a strong not agreeable smell, and an acrid, biting, bitterish nauseous taste. Water extracts the nauseous part, with little of the finer bitter; rectified spirit extracts this last, without much of the nauseous: proof spirit both: water elevates the whole of its flavour in distillation; rectified spirit brings over nothing.

Castor is looked upon as one of the capital nervine and antihysterical medicines: some celebrated practitioners have nevertheless doubted its virtues; and Neumann and Stahl declare it insignificant. Experience, however, has shown, that the virtues

of castor are considerable, though they are certainly far less than they have been generally supposed to be. Its official preparations are a simple water [L.], a spirituous tincture [L. E.], and a compound tincture of castor [E.] It is an ingredient in sundry other compositions, as the compound elixir and powder of myrrh [L.]

CASUMUNAR [L.]

This is a tuberous root, an inch or more in thickness, marked on the surface with circles or joints like galangal, of a brownish or ash colour on the outside, and a dusky yellowish within; it is brought from the East-Indies, cut into transverse slices: what kind of plant it produces is not known.

Casumunar has a warm bitterish taste, and an aromatic smell, somewhat resembling that of ginger. It has been celebrated in hysterical cases, epilepsies, palsies, loss of memory, and other disorders: the present practice sometimes employs it as a stomachic and carminative, but it is not so much used or known as it deserves to be.

CAUDA EQUINA, *seu Equisetum*: *Equisetum palustre longioribus setis* C. B. *Equisetum arvense* Lin. Horsetail; the herb.

This plant is common in watery places. It is said to be a very strong astringent: it has indeed a manifest astringency, but in a very low degree.

CENTAURII MAJORIS, *seu Rhapontici vulgaris, radix*: *Centaurei majoris folio in lacinias plures diviso* C. B. *Centaurea centaurii* Lin. Greater centaury; the root.

The greater centaury is a large plant, cultivated in gardens. The root has a rough somewhat acrid taste, and abounds with a red viscid juice: its rough taste has gained it

some esteem as an astringent; its acrimony as an aperient; and its glutinous quality as a vulnerary: the present practice takes little notice of it in any intention.

CENTAURII MINORIS *summitates*: *Centaurei minoris flore purpureo* J. B. *Gentiana centaurii* Lin. Lesser centaury; the tops [L. E.]

This grows wild in many parts of England, in dry pasture grounds, and amongst corn. The tops are an useful aperient bitter.

CENTINODIUM: *Polygonum latifolium* C. B. *Polygonum aviculare* Lin. Knotgrass; the herb.

This is said to be vulnerary and astringent, but on no very good foundation.

CEPA [L.] *Cepa vulgaris* C. B. *Allium cepa* Lin. Onions.

Onions differ from other bulbous-rooted plants, in having single roots, or such as cannot be parted so as to increase the plant. These roots are considered rather as articles of food than of medicine: they are supposed to afford little or no nourishment, and when eaten liberally produce flatulencies, occasion thirst, headachs, and turbulent dreams: in cold phlegmatic habits, where viscid mucus abounds, they doubtless have their use; as by their stimulating quality they tend to excite appetite, attenuate thick juices, and promote their expulsion: by some they are strongly recommended in suppressions of urine and in dropsies. The chief medicinal use of onions in the present practice is in external applications, as a cataplasm for suppurating tumours, &c.

CERA FLAVA [L. E.] Yellow bees wax.

This is a solid concrete obtained from the honeycombs after the honey

ney is got out, by heating and pressing them betwixt iron plates. The best sort is of a lively yellow colour, and an agreeable smell, somewhat like that of honey; when new, it is toughish yet easy to break; by age it becomes harder and more brittle, it loses its fine colour, and in great measure its smell.

CERA ALBA [*L. E.*].—White wax is prepared from the yellow, by reducing it into thin flakes, and exposing it for a length of time to the air; when sufficiently bleached, it is melted, and cast into cakes. The best sort is of a clear and almost transparent whiteness, and of a light agreeable smell like that of the yellow wax, but much weaker.

The chief medical use of wax is in cerates, plasters, unguents, &c. as an emollient for promoting supuration, &c. It readily unites with oils and animal fats, but not with watery or spirituous liquors. It is given also internally in diarrhœas, dysenteries, &c. mixed with oily substances, as in the *balsamum Locatelli* [*L.*]

CERASA: *Fruktus Cerasi majoris et sylvestris fructu subdulci, nigro colore inficiente C. B. et Cerasi sativæ, fructu rotundo rubro et acido Tourneforti et Cerasi acidissima sanguineo succo C. B. Pruni cerasi, var. 3, 4, 5, Lin.* The sweet cherry with a black juice; the pleasantly-sourish cherry, with a colourless juice; and the very sour cherry, with a blood-red juice; commonly called black, red, and morello cherries.

These fruits, especially the acid sorts, are very useful and agreeable coolers and quenchers of thirst; and are sometimes directed in this intention, in hot bilious, or febrile distempers. Boerhaave was extremely fond of these and the other fruits called *borai*, as aperients in some

chronic cases; and declares himself persuaded, that there is no kind of obstruction of the viscera capable of being removed by medicine, which will not yield to the continued use of these.

CERUSSA [*L. E.*]. Cerusse, or white lead.

This is prepared by exposing lead to the steam of vegetable acids till it is corroded into a white powdery substance. It is sometimes adulterated with a mixture of common whiting; this, if in any considerable quantity, may be easily discovered by the specific lightness of the compound: the sort called flake lead is not subject to abuse. See the article **PLUMBUM**; and *Cerussa* in the third part.

CETERACH: *Ceterach officinarum C. B. Asplenii ceterach Lin.* Spleenwort, or miltwaste.

This is a small bushy plant growing upon rocks and old walls. It has an herbaceous, somewhat mucilaginous, roughish taste: it is recommended as a pectoral and for promoting urine in nephritic cases. The virtue which it has been most celebrated for, is that which it has the least title to, diminishing the spleen.

CHÆREFOLII folia: *Cheraphylli sativi C. B. Scandicis chærefolii Lin.* Chervil; the leaves.

This is a low annual plant somewhat like parsley, commonly cultivated in gardens for culinary purposes. This plant is grateful both to the palate and stomach, gently aperient, and diuretic. Geoffroy assures us, that he has found it from experience to be of excellent service in dropsies: that, in this disorder, it promotes the discharge of urine when suppressed; renders it clear, when feculent and turbid; and when high

high and fiery, of a paler colour; that, it acts mildly without irritation, and tends rather to allay than excite inflammation. He goes so far as to say, that dropsies which do not yield to this medicine, are scarce capable of being cured by any other. He directs the juice to be given in the dose of three or four ounces every fourth hour, and continued for some time, either alone, or in conjunction with nitre and syrup of the five opening roots.

CHALYBS, vide FERRUM.

CHAMÆCYPARISSUS, vide
ABROTANUM FOEMINA.

CHAMÆDRYOS, seu *Trifraginis summitates cum semine*: *Chamædryos minoris repentis* C. B. *Teucrii chamædryos* Lin. Germander; the tops with the seed [L.]

This is a low shrubby plant, cultivated in gardens. The leaves, tops, and seeds have a bitter taste, with some degree of astringency and aromatic flavour. They are recommended as sudorific, diuretic, and emmenagogue, and for strengthening the stomach and viscera in general. With some they have been in great esteem in intermittent fevers; as also in scrophulous and other chronic disorders.

CHAMÆLEON ALBUS, vide
CARLINA.

CHAMÆMELI *folia, flores*: *Chamæmeli nobilis seu leucanthemi odoratioris* C. B. *Anthemis nobilis* Lin. Single-flowered chamomile (the trailing sort with larger leaves and flowers, and the disk of the flower not very convex); the leaves and flowers [L. E.]

These have a strong not ungrateful aromatic smell, and a very bitter nauseous taste. They are accounted

carminative, aperient, emollient, and in some measure anodyne: and stand recommended in flatulent colics, for promoting the uterine purgations, in spasmodic pains, and the pains of childbed women: sometimes they have been employed in intermittent fevers, and the nephritis. These flowers are frequently also used externally in discutient and antiseptic fomentations, and in emollient glysters: they enter the *sotus communis*, *decoctum commune pro clystere*, and *oleum viride* of our dispensatory: an essential oil [L.] is likewise prepared from them in the shops.

CHAMÆMELUM *flore multiplici* C. B. Double-flowered chamomile; the flowers.

These differ from the foregoing in having several rows of the white petals set thick together about the middle disk, which is much smaller. In this disk the medicinal qualities of the flower chiefly reside; and hence the double or small disked sort is inferior in efficacy to the single.

CHAMÆPITYOS *seu Iva arthritica folia*: *Chamæpityos lutea vulgaris sive folio trifido* C. B. *Teucrii Chamæpityos* Lin. Ground pine; the leaves.

This is a low hairy plant, clammy to the touch, of a strong aromatic resinous smell, and a bitter roughish taste. It is recommended as an aperient and vulnerary, as also in gouty and rheumatic pains.

CHEIRI, seu *Leucoii lutei, flores*: *Leucoii lutei vulgaris* C. B. *Cheiranthi cheiri* Lin. Wall-flower.

This grows upon old walls and among rubbish, in several parts of England. The flowers have a pleasant smell, and a subacid, bitterish, not agreeable taste: they are said to be cordial, anodyne, aperient, and emmenagogue, but are wholly neglected by practice.

CHE.

CHELIDONII MAJORIS *folia radix: Chelidonii majoris vulgaris C. B. & Lin.* Celandine; the leaves and root.

This plant grows upon old walls, among rubbish, and in waste shady places. The herb is of a blueish green colour; the root of a deep red; both contain a gold-coloured juice; their smell is disagreeable; the taste somewhat bitterish, very acrid, biting and burning the mouth; the root is the most acrid. Juice of celandine has long been celebrated in disorders of the eyes; but it is greatly too sharp, unless plentifully diluted, to be applied with safety to that tender organ. It has been sometimes used, and it is said with good success, for extirpating warts, cleansing old ulcers, and in cataplasms for the herpes miliaris. This acrimonious plant is rarely given internally; the virtues attributed to it are those of a stimulating aperient, diuretic, and sudorific: it is particularly recommended in the slow kind of jaundice, where there are no symptoms of inflammation, and in dropsies; some suppose the root to have been Helmont's specific in the hydrops ascites. Half a dram or a dram of the dry root is directed for a dose; or an infusion in wine of an ounce of the fresh root.

CHELIDONII MINORIS *folia, radix: Chelidonia rotundifolia minoris C. B. Ranunculi ficaria Lin.* Pilewort; the leaves and root.

This is a very small plant, found in moist meadows and by hedgesides: the roots consist of slender fibres, with some little tubercles among them, which are supposed to resemble the hæmorrhoids; from whence it has been concluded, that this root must needs be of wonderful efficacy for the cure of that distemper: to the taste, it is little other than mucilaginous.

CHERMES, vide **KERMES**.

CHINÆ radix. China root.

There are two sorts of this root in the shops, one brought from the East Indies (*Smilax China Lin.*), the other from the West (*Pseudo-China smilax Lin.*) They are both longish, full of joints, of a pale reddish colour, of no smell, and very little taste: the oriental, which is the most esteemed, is considerably harder and paler coloured than the other. Such should be chosen as is fresh, close, heavy, and upon being chewed appears full of a fat unctuous juice. China root was either unknown or disregarded by the ancient physicians. It was first introduced into Europe about the year 1535, with the character of a specific against venereal and cutaneous disorders; and as such was made use of for some time, but at length gave place to medicines of a more powerful kind. It is generally supposed to promote insensible perspiration and the urinary discharge; and by its unctuous quality to obtund acrimonious juices.

CHINA CHINÆ, vide **PERUVIANUS CORTEX**.

CICERIS RUBRI *semen: Ciceris floribus et seminibus ex purpura rubescentibus C. B.* Red chiches, or chick peas.

This is a sort of pulse cultivated in the warmer climates, where our finer peas do not thrive so well. They are a strong flatulent food, hard of digestion. Lithontriptic and diuretic virtues are attributed to them on no good foundation.

CHICHOREI *folia, radix: Chichorei sylvestris sive officinarum C. B. Cichorii intybi Lin.* Wild succory; the roots and leaves.

The root has a moderately bitter taste,

taste, with some degree of roughness; the leaves are somewhat less bitter: the roots, stalks, and leaves yield, on being wounded, a milky saponaceous juice. By culture this plant loses its green colour and its bitterness, and in this state is employed in salads: the darker coloured and more deeply jagged the leaves, the bitterer is their taste. Wild succory is an useful detergent, aperient, and attenuating medicine; acting without much irritation, tending rather to cool than to heat the body, and at the same time corroborating the tone of the intestines. The juice taken in large quantities, so as to keep up a gentle diarrhoea, and continued for some weeks, has been found to produce excellent effects in scorbutic and other chronic disorders.

CICUTÆ folia et semen: Cicuta majoris C. B. Conii maculati Lin. Hemlock; the leaves and seed [E.]

This is a large umbelliferous plant, common about the sides of fields, under hedges, and in moist shady places: the leaves are winged, divided into a great number of small fern-like sections, of a dark or blackish green colour, and appearing as it were rough; the stalk is hollow (as is likewise great part of the root after the stalk has arisen), and spotted with several blackish, red, or purple spots. Hemlock is sometimes applied externally 'in the form of decoction, infusion, or poultice, as a discutient. These are apt to excoriate, and their vapour is to some particularly disagreeable and hurtful. The stalks are insignificant, and the roots very virulent.' With regard to its virtue when taken internally, it has been generally accounted poisonous; which it doubtless is, in a high degree, when used in any considerable quantity. But Dr

Storck has lately found, that in certain small doses it may be taken with great safety; and that, without at all disordering the constitution, or even producing any sensible operation, it sometimes proves a powerful resolvent in many obstinate disorders. 'In scirrhus, the internal and external use of hemlock has been found useful, but then mercury has been generally used at the same time. In open cancer, it often abates the pains, and is free from the constipating effects of opium. It is likewise used in scrophulous tumours and ulcers, and in other ulcers that are only defined by the term ill-conditioned. It is also recommended by some in chincough, and various other diseases. Its common, and perhaps best form, is that of the powdered leaves, in the dose at first of two or three grains a-day, which in some cases has been gradually increased to upwards of two ounces a-day, without producing giddiness. An extract from the seeds is said to produce giddiness sooner than that from the leaves.' See *Extractum cicutæ* in the third part of this work.

CIMOLIA ALBA, seu Argilla alba. Tobaccopipe-clay.

This is a pure white clay, nearly of the same general nature with the boles already spoken of, but more viscous when moistened with water, and hence probably more effectual for obviating and incrassating acrimonious thin humours. It is scarcely ever used for any medicinal purpose.

CIMOLIA PURPURASCENS. Fullers earth.

This earth is more viscous than the boles, and less so than the tobaccopipe-clay. It is wholly neglected in practice.

• **CINARÆ folia.** *Cynara scolymus* Lin. Artichoke; the leaves [E.]

• Besides its use at table, the bitter juice of the leaf, mixt with an equal part of Madeira wine, is recommended in an ounce dose night and morning, as a powerful diuretic in dropsy. 'An infusion of the leaf may likewise be used.'

CINNABARIS NATIVA. Native cinnabar.

This is a ponderous mineral of a red colour, found in Spain, Hungary, and several other parts of the world. The finest sort is in pretty large masses, both externally and internally of an elegant deep red colour, which greatly improves upon grinding the mass into fine powder; this is imported by the Dutch from the East-Indies. There is another sort, of a good colour, in roundish drops, smooth without, and striated within.

This mineral appears from chemical experiments to be composed of mercury and sulphur, in such a manner, that the quantity of the former is commonly above six times greater than that of the latter: the finer the colour of the cinnabar, the more mercury it is found to hold. Native cinnabar has been by many preferred as a medicine to that made by art: but there does not appear to be any just foundation for this preference. The native has sometimes been observed to occasion nausea, vomiting, and anxiety: these probably proceeded from an admixture of some arsenical particles which it could not be freed from by repeated ablution. When pure, it has no quality or medical virtue distinct from those of the artificial cinnabar, like which it is not dissoluble in the animal fluids, and is commonly found of little activity. See Part III. chap. iv. sect. 7.

CINERES RUSSICI. Russia potash [L.]

• Potash is an impure alkaline salt, produced from all land plants, except the tetradynamia class, by burning with a close smothering heat. In this state they are called weed ashes, which contain, besides alkali, charcoal, sulphur, and a little vitriolated tartar. These foreign matters are partly separated, by mixing the ashes with water, and passing it through a vessel with holes at the bottom covered with straw. It is then evaporated to the consistence of honey, and afterwards burnt in an oven, from which it acquires a little stony matter. In this state, from its colour, it is called pearl ashes, the *sal alcalinus fixus vegetabilis* [E.]. If lime is mixed with the ashes, and passed through the vessel as before, the alkali is considerably deprived of its fixed air, is consequently caustic, has a darker colour, and gives a reddish solution, having dissolved some of the iron of the pot it is prepared in, and from which it is called potash. A deal of it is brought to us from America, Russia, and other places. Other kinds of impure vegetable alkali appear in commerce, under the names of cashub, marcott ashes, &c.

CINNAMOMUM: *Cinnamomum sive canella Zeylanica* C. B. *Laurus cinnamomum* Lin. Cinnamon [E.]

This is a light thin bark, of a reddish colour, rolled up in long quills or canes; of a fragrant, delightful smell, and an aromatic, sweet, pungent taste, with some degree of astringency. It is generally mixed with the cassia bark: this last is easily distinguishable by its breaking over smooth, whilst cinnamon splinters; and by its slimy mucilaginous taste,

taste, without any thing of the roughness of the true cinnamon. Cinnamon is a very elegant and useful aromatic, more grateful both to the palate and stomach, than most other substances of this class: by its astringent quality it likewise corroborates the viscera, and proves of great service in several kinds of alvine fluxes, and immoderate discharges from the uterus. An essential oil, a simple and spirituous distilled water, and a tincture of it, are kept in the shops: it is likewise employed as a spicy ingredient in a great number of compositions.

CITREORUM *cortex et succus: Fructus mali medicæ C. B. Citrus medicæ Lin.* Citrons; the yellow rind and juice.

The citron is an evergreen tree or shrub, of the same genus with the orange and lemon: it was first brought from Assyria and Media (whence the fruit is called *mala Assyria*, *mala Medica*) into Greece, and thence into the southern parts of Europe, where it is now cultivated. Citrons are rarely made use of among us: they are of the same quality with lemons, except that their juice is somewhat less acid.

CITRULLI *femen: Anguriæ citrulli dictæ C. B. Cucurbita citrulli Lin.* Citruls; the seed.

This plant is rarely met with among us, unless in botanic gardens. The seeds are in the number of the four greater cold seeds, and agree in quality with the others of that class.

CNICUS, vide **CARTHAMUS**.

COCCINELLA, *seu Cochinella; Coccus casti Lin.* Cochineal [*L. E.*]

This is a small irregular roundish body, of a dark red colour on the outside, and a deep bright red with-

in: it is brought from Mexico and New Spain. This substance has long been supposed to be the seed of a plant: it appears from chemical experiments to be an animal, and from the accounts of the more celebrated naturalists, an insect, which breeds on the American prickly-pear tree, and adheres thereto without changing its place. Cochineal has been strongly recommended as a sudorific, cardiac, and alexipharmac; but practitioners have never observed any considerable effects from it. Its greatest consumption is among the scarlet dyers; and in medicine its principal use is as a colouring drug: both watery and spirituous liquors extract its colour. In the London pharmacopœia three tinctures, in the Edinburgh two, receive from this drug a fine red colour.

COCHLEÆ TERRESTRES,
vide **LIMACES TERRESTRES**.

COCHLEARIÆ HORTENSIS *folia: Cochlearia folio subrotundo C. B. Cochlearia officinalis Lin.* Garden scurvy-grass; the leaves [*L. E.*]

COCHLEARIÆ MARINÆ *folia: Cochlearia folio sinuato C. B. Cochlearia Anglica Lin.* Sea scurvy-grass; the leaves.

These plants have little other difference, as to their external appearance, than that expressed in their titles: in taste and medical virtue, the first is considerably the strongest; and hence is alone retained both by the London and Edinburgh colleges.

Scurvy grass is a pungent stimulating medicine; capable of dissolving viscid juices, opening obstructions of the viscera and the more distant glands, and promoting the fluid secretions: it is particularly cele-

celebrated in scurvy, and is the principal herb employed in these kinds of disorders in the northern countries.

COFFEA. Coffee: the fruit of an oriental shrub called by Jussieu *jasminum Arabicum lauri folio, cujus semen apud nos caffè dicitur. Coffea Arabica Lin.*

This fruit is employed rather as food than as a medicine. The medical effects expected from it, are to assist digestion, promote the natural secretions, and prevent or remove a disposition to sleepiness. 'It has been recommended in spasmodic asthma.'

• **COLCHICI radix:** *Colchici autumnalis Lin.* Meadow saffron; the root.

'This plant grows wild in meadows, in the more temperate parts of Europe. The roots, freed from the outer blackish coat and fibres below, are white, and full of a white juice. In drying they become wrinkled and dark coloured. Applied to the skin, it shows some signs of acrimony; and taken internally, it is said sometimes to excite a sense of burning heat, bloody stools, and other violent symptoms. In the form of syrup [*E.*], however, it has been given to the extent of two ounces a-day without any bad consequence. It is sometimes employed as a diuretic in dropsy.'

COLOCYNTHIDIS medulla. Coloquintida, or bitter apple; the medullary part of the dried fruit [*L. E.*]

This is the produce of a plant of the gourd kind (*Cucumis colocynthis Lin.*) growing in Turkey. The fruit is about the size of an orange; its medullary part, freed from the rind and seeds, is alone made use of in medicine: this is very light, white, spongy, composed of mem-

branous leaves; of an extremely bitter, nauseous, acrimonious taste. Colocynth is one of the most powerful and most violent cathartics. Many eminent physicians condemn it as dangerous, and even deleterious: others recommend it not only as an efficacious purgative, but likewise as an alterative in obstinate chronic disorders. Thus much is certain, that colocynth in the dose of a few grains, acts with great vehemence, disorders the body, and sometimes occasions a discharge of blood. Many attempts have been made to correct its virulence by the addition of acids, astringents, and the like; these may lessen the force of the colocynth, but no otherwise than might be equally done by a reduction of the dose. The best method of abating its virulence, without diminishing its purgative virtue, seems to be by triturating it with gummy farinaceous substances, or the oily seeds, which, without making any alteration in the colocynth itself, prevent its resinous particles from cohering, and striking upon the membranes of the intestines, so as to irritate, inflame, or corrode them. It is an ingredient in some of the purgative pills, and the cathartic extract of the shops.

• **COLOMBÆ radix.** Colombo; the root [*E.*]

'It is the root of a certain vegetable; and is brought from Colombo in Ceylon in the form of knobs, having a rough surface, and consisting of a cortical, woody, and medullary lamina. It has a disagreeably bitter taste, an aromatic flavour; in experiment is considerably antiseptic, and particularly effectual in correcting and preventing the putridity of bile. Abroad it is much used in diseases attended with bilious symptoms, particularly in cholera; and is said to be sometimes very

very effectual in other cases of vomiting. Some consider it as very useful in dyspepsia. Half a dram of the powder is given repeatedly in the day. Water is not so complete a menstruum as spirits, but to their united action it yields a flavoured extract in very considerable quantity.

CONSOLIDÆ MAJORIS, seu *Symphyti majoris, radix*: *Symphyti consolida majoris* C. B. *Symphyti officin.* Lin. Comfrey; the root.

This is a rough hairy plant, growing wild by river-sides and in watery places. The roots are very large, black on the outside, white within, full of a viscid glutinous juice, of no particular taste. They agree in quality with the roots of althæa; with this difference, that the mucilage of *consolida* is somewhat stronger bodied. Many ridiculous histories of the *consolidating* virtues of this plant are related by authors.

CONSOLIDA MEDIA, vide **BUGULA**.

CONSOLIDA MINIMA, vide **BELLIS MINOR**.

CONTRAYERVA. *Dorstenia contrayerva* Lin. [L. E.]

This is a knotty root, an inch or two in length, about half an inch thick, of a reddish brown colour externally, and pale within; long, tough, slender fibres shoot out from all sides of it; these are generally loaded with small round knots. This root is of a peculiar kind of aromatic smell, and a somewhat astringent, warm, bitterish taste, with a light and sweetish kind of acrimony when long chewed: the fibres have little taste or smell; the tuberous part therefore should be alone chosen.

Contrayerva is one of the mildest of those substances called alexipharmacs: it is indisputably a good and useful diaphoretic, and may be safely given in much larger doses than the common practice is accustomed to exhibit it in. Its virtues are extracted both by water and rectified spirit, and do not arise in evaporation with either: the spirituous tincture and extract taste stronger of the root than the aqueous ones.

CONVALLARIÆ *radix* [E.] *Convallaria polygonati* Lin. Solomon's seal; the roots.

The root of this common plant contains a sweetish mucilage, and has been used in form of poultice in inflammations; but whether this or any other is better than the common poultice of bread and milk, is doubted. A decoction of this root in milk has also been mentioned in certain cases of hæmorrhagy. The flowers, berries, and leaves, are said to be poisonous.

COPAL, supposed by some a mineral, appears to be a resin obtained from several sorts of large trees growing in New Spain. This resin is brought to us in irregular lumps, some transparent, of a yellowish or brown colour, others semitransparent and whitish. It has never come into use as a medicine, and is rarely met within the shops.

CORALLINA: *Musculus maritimus* seu *corallina officinarum* C. B. Coralline, or sea moss.

This is a branched cretaceous substance of a white colour, 'the habitation and production of polypi,' growing on rocks, and sometimes on the shells of fishes. It is celebrated as a vermifuge, on what foundation

tion I know not: to the taste it is entirely insipid.

CORALLIUM RUBRUM.

Red coral [L.]

This is also a marine production, of the same nature with the foregoing. It cannot reasonably be looked upon in any other light than as a mere absorbent; as such it enters the officinal crabs-claw powder, and is sometimes in practice directed by itself.

CORIANDRI semen: *Coriandri majoris* C. B. *Coriandri sativi* Lin. Coriander; the seed [L. E.]

Coriander is an umbelliferous plant, differing from all the others of that class in producing spherical seeds. These, when fresh, have a strong disagreeable smell, which improves by drying, and becomes sufficiently grateful; they are recommended as carminative and stomatic. They are an ingredient in the officinal compound lime-water and electuary of bayberries [L.]

CORNU CERVI [L.] The Stag or hart's horns.

Many extraordinary virtues have been attributed to these horns, and to all the parts of the animal in general: but experience gives no countenance to them; nor do they seem to have any other foundation than the great timidity of the hart, the annual renewal of his horns, and an opinion of his extraordinary longevity; from which circumstances it was inferred, that all the parts of him must be proper for intimidating the enraged Archeus, renewing health and strength, and prolonging life. 'They are to be considered as of the same nature with bones, and their products by heat are those of animal substances in general. See Part I.'

The horns boiled in water, give out an emollient nutritious gelly. Burnt to whiteness, they yield an earth, employed in the officinal white decoction [L.]

CORNI fructus: *Corni hortensis maris* C. B. *Corni maris* Lin. The Cornel tree; its fruit.

This fruit is moderately cooling and astringent, but not regarded as an article of the materia medica.

COSTUS [L.] *Costus Arabicus* Lin. A root brought from the East-Indies.

Authors mention two sorts of costus, sweet and bitter: in the shops we seldom meet with any more than one, the *costus dulcis officinarum* C. B. The root is about the size of the finger; and consists of a yellowish woody part inclosed within a whitish bark: the former is very tough, of no smell, and very little taste; the cortical part brittle, of a warm, bitterish, aromatic taste, and an agreeable smell, somewhat resembling that of violets or Florentine orris. Costus is said to attenuate viscid humours, to promote expectoration, perspiration, and urine. At present it is rarely met with in prescription, and not often in the shops; in mithridate, theriaca, and the confectio paulina, the only officinal compositions it is directed in, zedoary supplies its place.

COSTUS HORTORUM, vide **BALSAMITA MAS.**

COTULÆ FOETIDÆ folia: *Chamæmeli fetidi* C. B. *Anthemis cotulæ* Lin. Mayweed, or wild chamomile; the leaves.

This plant is common among corn, and in waste places. In appearance it resembles some of the garden chamomiles, but is easily distinguished.

tinguishable from them by its strong fetid scent. It is rarely or never used in the present practice.

CRASSULÆ *five Telephii folia: Telephii vulgaris C. B. Sedi Telephii Lin.* Orpine; the leaves.

This is a very thick-leaved juicy plant, not unlike the houseleeks. It has a mucilaginous roughish taste, and hence is recommended as emollient and astringent, but has never been much regarded in practice.

CREPITUS LUPI, vide **LYCOPERDON**.

CRETA [*L. E.*] White chalk.

This is an earth, soluble in vinegar and the lighter acids, so as to destroy every sensible mark of their acidity. This earth is one of the most useful of the absorbents, and is to be looked upon simply as such: the astringent virtues which some attribute to it, have no foundation, unless in so far as the earth is satiated with acid, with which it composes a saline concrete manifestly subastringent. It gives name to an officinal julep [*L.*], a powder and potion [*E.*], and is an ingredient in the cardialgic troches. It is employed also for extricating the volatile salt of sal ammoniac [*L. E.*]

CRITHMI *folia: Crithmi five feniculi maritimi minoris C. B.* Samphire; the leaves.

This plant grows wild on rocks, and in maritime places; the leaves are somewhat like those of fennel, but the segments much thicker and shorter: their smell resembles that of smallage; the taste is warm, bitterish, not agreeable. They are said to be stomachic, aperient, and diuretic.

CROCUS: Crocus sativus C. B.

et Lin. Saffron; the chives, or fleshy capillaments growing at the end of the pistil of the flower, carefully picked and pressed together into cakes [*L. E.*]

There are three sorts of saffron met with in the shops, two of which are brought from abroad, the other is the produce of our own country; this last is greatly superior to the two former, from which it may be distinguished by its blades being broader. When in perfection it is of a fiery orange red colour, and yields a deep yellowish tincture: it should be chosen fresh, not above a year old, in close cakes, neither dry, nor yet very moist, tough and firm in tearing, of the same colour within as without, and of a strong, acrid, diffusive smell.

Saffron is a very elegant and useful aromatic; besides the virtues which it has in common with all the bodies of that class, it remarkably exhilarates, raises the spirits, and is deservedly accounted one of the highest cordials; taken in large doses, it is said to occasion immoderate mirth, involuntary laughter, and the ill effects which follow from the abuse of spirituous liquors. This medicine is particularly serviceable in hysteric depressions proceeding from a cold cause or obstruction of the uterine secretions, where other aromatics, even those of the more generous kind, have little effect. Saffron imparts the whole of its virtue and colour, to rectified spirit, proof spirit, wine, vinegar, and water: a tincture drawn with vinegar, loses greatly of its colour in keeping: the watery and vinous tinctures are apt to grow sour, and then lose their colour also: that made in pure spirit keeps in perfection for many years. Its officinal preparations are, a spirituous tincture [*E.*], a

vinous tincture, and syrup [L.] It is an ingredient in the cordial confection [L.] the *pectoral* and *paregoric* elixirs [E.], and several of the aloetic compositions. 'It was lately given in the Edinburgh Infirmary by Dr Henry Cullen, even to the extent of half an ounce a-day, in several hysterical cases, without any sensible effect whatever.'

CUBEBAE [L. E.] *Piper cubeba* Lin. Cubebs.

Cubebs are a fruit brought from the East Indies. This fruit has a great resemblance to pepper. The principal difference distinguishable by the eye, is that each cubeb is furnished with a long slender stalk (whence they are called by some *piper caudatum*.) In aromatic warmth and pungency, cubebs are far inferior to pepper. They are an ingredient in mithridate and theriaca, [L.]

CUCUMERIS HORTENSIS,
femen: Cucumeris sativa Lin. Garden cucumbers; the seeds.

These are in the number of the four greater cold seeds; they are less apt to grow rancid in keeping than the others of that class.

CUCUMERIS AGRESTIS
fructus: Cucumeris sylvestris asinini dicti C. B. *Momordica elaterii* Lin. Wild cucumber; the fruit [L. E.]

This plant, found wild in foreign countries, is with us cultivated in gardens. Its principal botanic difference from the former, is the smallness of its fruit, which is no bigger than a Spanish olive: when ripe, it bursts on a little touch, and sheds its seeds with violence, and hence was named by the Greeks *elaterium*. This name is applied likewise to the fecule of the juice of the fruit [E.], the only preparation of the plant made use of in medicine. 'The juice, on standing, separates

into the fecule, which falls to the bottom, and a watery fluid which swims above. The clear part may be decanted off, and the rest of the liquid drained off by cotton threads hung over the sides of the vessel acting like syphons. The fecule may be farther dried by the sun, or a slow heat.' Elaterium is a strong cathartic, and very often operates also upwards. Two or three grains are accounted in most cases a sufficient dose. Simon Paulli relates some instances of the good effects of this purgative in dropsies: but cautions practitioners not to have recourse to it till after milder medicines have proved ineffectual; to which caution we heartily subscribe. Medicines indeed in general, which act with violence in a small dose, require the utmost skill to manage them with any tolerable degree of safety: to which may be added, that the various manners of making these kinds of preparations, as practised by different hands, must needs vary their power.

CUCURBITAE *femen: Cucurbita oblonga, flore albo, folio molli* C. B. *Cucurbita lagenaria* Lin. The gourd; its seeds.

These are in the number of the four greater cold seeds. They unite with water by trituration into an emulsion, and yield to the press a soft insipid oil, and possess the general virtues of unctuous substances.

CUMINUM, vide **CYMINUM**.

CUPRESSI *fructus: Cupressi sempervirentis* Lin. The cypress tree; its fruit.

This is a tall tree growing wild in the warmer climates. The fruit is a strong astringent; and in some places frequently used as such: Among us it is very rarely employed, and

and not often met with in the shops.

CUPRUM [L. E.] Copper.

The preparations of copper are violently emetic, and therefore very rarely exhibited internally. Some have ventured upon a solution of a grain or two of the metal in vegetable acids, and observe, that it acts almost as soon as received into the stomach, so as to be of good use for occasioning poisonous substances that have been swallowed, to be immediately thrown up again. Boerhaave recommends a saturated solution of this metal in volatile alkaline spirits, as a medicine of great service in disorders proceeding from an acid, weak, cold, phlegmatic cause: if three drops of this tincture be taken every morning with a glass of mead, and the dose doubled every day to twenty-four drops, it proves (he says) aperient, attenuating, warming, and diuretic: he assures us, that by this means he cured a confirmed ascites, and that the urine run out as from an open pipe; but at the same time acknowledges, that upon trying the same medicine on others, it failed him. He likewise recommends other preparations of copper, as of wonderful efficacy in certain kinds of ill habits, weakness of the stomach, &c. but we cannot think the internal use of this metal commendable, or even safe. Physicians in general seem to be agreed, that it has really a virulent quality; and too many examples are met with of fatal consequences ensuing upon eating food that had been drest in copper vessels not well cleaned from the rust which they had contracted by lying in the air.

Great care ought to be had that acid liquors, or even water, designed for internal use, be not suffered to stand long in vessels made of copper; otherwise they will dissolve so

much of the metals as will give them disagreeable qualities. Hence in the distillation of simple waters with copper stills, the last runnings, which are manifestly acid, have frequently proved emetic. It is remarkable, that whilst weak acid liquors are kept boiling in copper vessels, they do not seem to dissolve any of the metal; but if suffered to remain in them for the same length of time without boiling, they become notably impregnated with the copper. Hence the confectioners, by skilful management, prepare the most acid syrups in copper vessels without giving them any ill taste from the metal.

The chief preparations of copper are, the blue vitriol, verdigris, and cuprum ammoniacum. The blue vitriol is recommended by some as a useful emetic, particularly in cases of incipient phthisis with a view of resolving tubercles. It is sometimes employed as an astringent and escharotic; and verdigris is used in form of ointment in certain ulcerations, as tinea, &c. The cuprum ammoniacum is recommended in epilepsy.

CURCUMA [E.] *Curcuma longa* Lin. Turmeric.

Turmeric is a root brought from the East Indies, where it is used not only in medicine, but for colouring and seasoning food, as rice, &c. It is internally of a deep lively yellow or saffron colour, which it readily imparts to watery liquors. It has an agreeable, weak smell, and a bitterish somewhat warm taste. Turmeric is esteemed aperient and emmanagogue, and of singular efficacy in the jaundice. It tinges the urine of a saffron colour.

CUSCUTA. *Cuscuta Europea* Lin. Dodder.

This is of the class of plants call-

ed parasitical, or which grow out from the body of others: it has no leaves, consisting only of a number of juicy filaments matted together. There are two sorts of it, *cuscuta major* C. B. which grows commonly in heaths on furzes, nettles, &c. and likewise in fields of flax and other manured plants; and the *cuscuta minor*, or *epithymum* of the same author, so called from its being found only upon thyme. This last is preferred for medicinal use, and is usually brought from Leghorn and Turkey, with tops and stalks of thyme amongst it. *Epithymum* has a pretty strong smell, and roughish somewhat pungent subtile taste. Its virtues remain as yet to be determined; the ancients ranked it among cathartics; but those who have given it in that intention have been generally disappointed.

‘*CURSUTÆ: radix*: Yellow gentian; the root.

‘This foreign root has a very bitter taste, seems to be a mere variety of the gentian, and is used by some in dyspepsia.’

CYANI flores: *Cyani segetum* C. B. *Centurea cyani* Lin. Blue-bottle; the flowers.

This is a common weed among corn. The flowers are of an elegant blue colour, which, if carefully and hastily dried, they retain for a considerable time. As to their virtues, the present practice expects not any from them; notwithstanding they have been formerly celebrated against the bites of poisonous animals, contagious diseases, palpitations of the heart, and many other distempers.

CYCLAMEN, vide *ARTHANITA*.

CYDONIA MALA, *eorumque semina*; *Fructus Cotoneæ mali* J. B.

Pyri cydonæa Lin. The quince-tree; the fruit and its seeds [L. E.]

Quinces have a very austere acid taste: taken in small quantity, they are supposed to restrain vomiting, and alvine fluxes; and more liberally, to loosen the belly. The seeds abound with a mucilaginous substance of no particular taste, which they readily impart to watery liquors: an ounce will render three pints of water thick and ropy like the white of an egg. A syrup of the fruit and mucilage of the seeds [L.] are kept in the shops.

CYMINI semen: *Cymini semine longiore* C. B. *Feniculi orientalis cumini dicti* Tourn. *Cumini cymini* Lin. Cummin; the seeds [L. E.]

This is an umbelliferous plant, in appearance resembling fennel, but much smaller; the seeds are brought chiefly from Sicily and Malta. Cummin seeds have a bitterish warm taste, accompanied with an aromatic flavour, not of the most agreeable kind. They are accounted good carminatives, but not very often made use of. An essential oil of them is kept in the shops, and they give name to a plaster and cataplasm [L.]

CYNOGLOSSI radix: *Cynoglossi majoris vulgaris* C. B. *Cynoglossi officinalis* Lin. Houndstongue; the root.

The leaves of this plant are in shape thought to resemble a tongue, whence its name; they are clothed with a whitish down: it grows wild in shady lanes. The roots have a rank disagreeable smell, and rough bitterish taste, covered with a glutinous sweetishness. The virtues of this root are very doubtful: it is generally supposed to be narcotic, and by some to be virulently so: others declare, that it has no virtue of this kind, and look upon it as a mere

mere glutinous astringent. The present practice takes no notice of it in any intention.

CYNOSBATI fructus: *Rosa sylvestris vulgaris flore odorato incarnato* C. B. *Rosa canina* Lin. The wild briar, dog-rose, or hip-tree; its fruit [L.]

This bush grows wild in hedges throughout England. The flowers have a pleasant smell; but so weak, that Parkinson and others have named the plant *rosa sylvestris inodora*: a water distilled from them smells agreeably. The fruit or hips contain a sourish sweetish pulp; with a rough prickly matter inclosing the seeds, from which the pulp ought to be carefully separated before it is taken internally: the Wirtemberg college observes, that from a neglect of this caution, the pulp of hips sometimes occasions a pruritus and uneasiness about the anus; and I have known the conserve of it to excite violent vomiting. The conserve is the only official preparation of this fruit.

CYPERI LONGI radix: *Cyperus odorati radice longa, sive cyperi officinarum* C. B. *Cyperus longi* Lin. Long Cyperus; the root.

This is a plant of the graminifolious kind; it is sometimes found wild, in marshy places in England; the roots have been generally brought to us from Italy. This root is long, slender, crooked, and full of knots; outwardly of a dark brown, or blackish colour, inwardly whitish; of an aromatic smell, and an agreeable warm taste: both the taste and smell are improved by moderate exciccation. Cyperus is accounted a good stomachic and carminative, but at present very little regarded.

DACTYLI: *Fructus Palmae majoris* C. B. *Phoenix dactylifera*

ra Lin. Dates: a half-dried fruit, about the shape of of an acorn, but generally larger, consisting of a sweet pulpy part and a hard stone: the best are brought from Tunis. They were formerly used in pectoral decoctions; and supposed, besides their emollient and incrassating virtue, to have a slight astringency.

DAUCICRETICI semen: *Dauci foliis feniculi tenuissimis* C. B. *Athamantæ Cretensis* Lin. Candy carrot, or carrot of Crete; the seeds [L.]

This is an umbelliferous plant, growing wild in the Levant and the warmer parts of Europe. The seeds, which are brought from Crete, have a warm biting taste, and a not disagreeable aromatic smell. They are carminative, and said to be diuretic, but at present little otherwise used than as ingredients in the mithridate and thriaca.

DAUCI SYLVESTRIS semen: *Pastinaca sylvestris tenuifolia* Dioscoridis, *vel dauci officinarum* C. B. *Dauci carota* Lin. Wild carrot; the seed [E.]

This is common in pasture grounds and fallow fields throughout England. The seeds possess the virtues of those of the *daucus Creticus*, in an inferior degree; and have often supplied their place in the shops, and been themselves supplied by the seeds of the garden carrot: these last are in warmth and flavour, the weakest of the three: the seeds of the Candy carrot are much the strongest.

DENTIS LEONIS sive Taraxaci folia: *Dentis leonis latiore folio, et angustiore folio* C. B. *Leontodon-tis taraxaci* Lin. Dandelion; the leaves [E.]

This plant is common in fields and uncultivated places; it has several narrow dentated leaves lying on the ground, with a slender naked

stalk sustaining a yellow flower. The root, leaves, and stalk, contain a bitter milky juice : they promise to be of use as aperient and detergent medicines, and have sometimes been directed in this intention with good success. Boerhaave esteems them capable, if duly continued, of resolving almost all kinds of coagulations, and opening very obstinate obstructions of the viscera.

DIAPENSIA, vide SANICULA.

DICTAMNUS ALBUS, vide
ERAXINELLA.

DICTAMNI CRETICI *folia* :
Origanum Creticum latifolium tomentosum
Tourn. *Origanum dictamnii* Lin. Dit-
tany of Crete [L.]

This is a kind of *origanum* said to grow plentifully in the island of Candy, in Dalmatia, and in the Morea : it has been found hardy enough to bear the ordinary winters of our own climate. The leaves, which are the only part in use with us, come from Italy. The best sort are well covered over with a thick white down, and now and then intermixed with purplish flowers. In smell and taste, they somewhat resemble lemon thyme ; but have more of an aromatic flavour, as well as a greater degree of pungency ; when fresh, they yield a considerable quantity of an excellent essential oil. They are ingredients in the *pulvis à myrrha, species à scordio, mithridate, and theriaca* [L.]

DIGITALIS *folia* : *Digitalis purpurea folio aspero* C. B. *Digitalis purpurea* Lin. Fox-glove ; the leaves.

This grows wild in woods, and on uncultivated heaths : the elegant appearance of its purple flowers (which hang in spikes along one side of the stalk) has gained it a place in

some of our gardens. The leaves have been strongly recommended, externally against scrophulous tumours ; and likewise internally, in epileptic disorders : what service they may be capable of doing in these cases, we have no experience. Several examples are mentioned by medical writers of their occasioning violent vomiting, hypercatharsis, and disordering the whole constitution ; inasmuch that Boerhaave accounts them poisonous. Their taste is bitter and very nauseous.

‘ An infusion of two drams of the leaf in a pint of water given in half-ounce doses every two hours or so, till it begin to puke or purge, is recommended in dropsy, particularly that of the breast. It is said to have produced an evacuation of water so copious and sudden, in ascites, by stool and urine, that the compression of bandages was found necessary. The plentiful use of diuretics is ordered during its operation. The remedy, however, is inadmissible in very weakly patients.’

‘ DOLICHI PRURIENTIS
Lin. pubes leguminis rigida. Cow-
hage ; the rigid down of the pod
[E.]

‘ The dolichos, on account of the spiculæ of the seed-bag, excites, when touched, a very uneasy itching. These spiculæ have been long used in South America in cases of worms ; and have of late been frequently employed in Britain. The spiculæ of one pod mixed with syrup or molasses, and taken in the morning fasting, is a dose for an adult. The worms are said to appear with the second or third dose, and by means of a purge in some cases the stools are said to have consisted almost entirely of worms. No bad consequence from this remedy is taken notice of.’

DORO-

DORONICI ROMANI *radix: Doronici radice scorpii C. B. Doronici pardalianches Lin.* Roman wolfsbane; the root.

This grows spontaneously on the Alps, and in sundry places of Germany. It has been greatly disputed whether this plant is to be ranked among the poisonous or salutary ones: we shall not here enter into this controversy; observing only, that all the intentions it has been recommended for may certainly be answered by other medicines of no less efficacy, and known to be innocent; and that therefore the use of doricum may be very reasonably laid aside: in this we are warranted by common practice, which has not for a long time paid any regard to it.

DORONICI GERMANICI, *feu Arnica [E.] flores et radix: Doronici plantaginis alterius C. B. Arnica montana Lin.* German leopardbane; the flowers and root [E.]

This plant grows in different parts of Europe. It has an acrid bitter taste; and when bruised emits a pungent odour, that excites sneezing; on which account the country people in some parts of Germany use it in snuff, and smoke it like tobacco. It has been called *panacea lapporum*, from its alleged efficacy in effusions and suffusions of blood from falls, bruises, &c. It has been mentioned in certain symptomatic states of dyspnœa, amenorrhœa, and jaundice, as likewise in gout, nephritis calculosa, &c. It is said to possess considerable antiseptic powers. Of late it has been chiefly taken notice of in paralytic affections, as hemiplegia and amaurosis, and in various convulsive and spasmodic disorders. A pint of the infusion from a dram to half an ounce of the flowers is taken in the day. It some-

times pukes, sweats, and proves diuretic. Frequently, however, it produces no sensible evacuations. Some patients are said to feel, during its use, shooting pains and electric like shocks in the parts affected.

DRACONTIUM: Dracunculus polyphyllus C. B. Arum polyphyllum Ricini. Ari dracunculi Lin. Dragon's or the many-leaved arum.

This is cultivated in gardens. It has scarce any other medical difference from the common *arum*, than being in all its parts somewhat more pungent and acrimonious.

DRAKENA, *vide CONTRAYERVA.*

DULCAMARÆ, *feu amara-dulcis, solani lignosi, herba, radix: Solani scandentis seu dulcamaræ C. B. Solani dulcamaræ Lin.* Bittersweet, or woody nightshade; the herb and roots [E.]

This plant grows wild in moist hedges, and climbs on the bushes with woody brittle stalks. The taste of the twigs and roots, as the name of the plant expresses, is both bitter and sweet; the bitterness being first perceived, and the sweetness afterwards. They are commended as deobstruents, for resolving coagulated blood, &c. and are said to occasion generally some considerable evacuation by sweat, urine, or stool, particularly the latter.

EBULI *folia, cortex, radix: Sambuci humilis five ebuli C. B. Sambuci ebuli Lin.* Dwarf elder, or danewort; the root, bark, and leaves.

This plant grows wild in some counties of England; but about London is rarely met with, unless in gardens: the eye distinguishes little difference betwixt it and the elder

elder tree, except in the size; the elder being a pretty large tree, and the dwarf elder only an herb three or four feet high. The leaves, roots, and bark of *ebulus* have a nauseous, sharp, bitter taste, and a kind of acrid ungrateful smell: they are all strong cathartics, and as such are recommended in dropfies, and other cases where medicines of that kind are indicated. The bark of the root is said to be strongest; the leaves the weakest. But they are all too churlish medicines for general use: they sometimes evacuate violently upwards, almost always nauseate the stomach, and occasion great uneasiness of the bowels. By boiling, they become (like the other drastics) milder, and more safe in operation. Fernelius relates, that by long coction they entirely lose their purgative virtue. The berries of this plant are likewise purgative, but less virulent than the other parts. A rob prepared from them may be given to the quantity of an ounce as a cathartic; and in smaller ones as an aperient and deobstruent in chronic disorders: in this last intention, it is said by Haller to be frequently used in Switzerland, in the dose of a dram.

ELATINES folia: *Linaria segetum nummularia folio non villosa* Tourn. *Antirrhini elatines* Lin. Fluellin, or female speedwell; the leaves.

This is a low creeping plant, growing wild in corn-fields. The leaves have a very bitter roughish taste. They were formerly accounted excellent vulneraries, and of great use for cleansing and healing old ulcers and spreading cancerous sores: some have recommended them internally in leprous and scrophulous disorders; as also in hydroptic cases. It gives name to one of the officinal honeys [L.]; but the

plant itself is never used in the present practice, and this preparation of it is in no great esteem.

ELEMI: *Amyris elemifera*, Lin. Gum elemi.

This is a resin brought from the Spanish West Indies, and sometimes from the East Indies, in long roundish cakes, generally wrapped up in flag leaves. The best sort is softish, somewhat transparent, of a pale whitish yellow colour, inclining a little to greenish, of a strong not unpleasant smell. It almost totally dissolves in pure spirit, and sends over some part of its fragrance along with this menstruum in distillation: distilled with water, it yields a considerable quantity of pale coloured, thin, fragrant essential oil. This resin gives name to one of the officinal unguents, and is at present scarce any otherwise made use of; though it is certainly preferable for internal purposes to some others which are held in greater esteem.

ELEOSELINUM, vide **APIUM**.

ELEUTHERIÆ seu *Cascarilla cortex* [L. E.] *Crotonis Cascarilla* Lin. Cascarilla; a bark said to be imported into Europe from one of the Bahama islands called *Elathéria*, in curled pieces, or rolled up into short quills, about an inch in width, pretty much resembling in appearance the *Peruvianus cortex*, but of a paler brown colour on the inside, less compact, and more friable.

Its taste is bitterer, yet less disagreeable, and less rough than that of the Peruvian bark; with a considerably greater share of aromatic pungency and heat: the thin outward skin, which is of a whitish colour, has no taste. It is easily flammable, and yields whilst burning a very fragrant smell: this peculiar property

property distinguishes the *eleutheria* from all other known barks.

Stifferus seems to have been the first that employed the *cortex eleutheria* as a medicine, in Europe. He relates (in his *Act. laborat. chym.* published in the year 1693) that he received this aromatic bark from England; and that some time after it was sold at Brunswick for Peruvian bark: that a tincture of it in alkalized vinous spirits, or dulcified alkaline ones, proved carminative and diuretic, and did considerable service in arthritic, scorbutic, and calculous cases; and that, if taken immediately after meals, it affected the head a little. *Eleutheria* was soon after employed by Apinus in an epidemic fever which raged in some part of Norway in 1694 and 1695; this disease, which at first had the appearance of an ordinary intermittent, at length was accompanied with petechial spots. The common alexipharmacs and sudorifics were found ineffectual; but the powder or extract of this bark, joined with them, proved successful, even after petechiæ had come forth: dysenteries succeeding the fever, were removed by the same medicine. During the use of the *eleutheria*, the patient generally sweated plentifully, without loss of strength, or other inconvenience: the belly was likewise kept open; those who did not sweat, had three or four stools a day: where the menstrual or hæmorrhoidal fluxes were suppressed at the beginning of the disorder, they generally, upon the use of this medicine, re-appeared. Among the Germans, the *eleutheria* is at present in very great esteem, and frequently employed against common intermittents, in preference to the Peruvian bark, as being less subject to some inconveniences which the latter, on account of its great astringency, is apt to occasion: it is also

given, with good success, in flatulent colics, internal hæmorrhagies, dysenteries, the diarrhœæ of acute fevers, and other like disorders. The gentlemen of the French academy found this bark of excellent service in an epidemic dysentery in the year 1719; in which *ipécacuanha* proved ineffectual: Mr Boul-duc observed, that this last left a lowness and weakness of stomach, which continued for a long time, whilst *eleutheria* soon raised the strength, and promoted appetite. Among us the use of this bark is not yet so general as it seems to deserve: infusions of it are sometimes directed for promoting expectoration.

ENDIVÆ radix, folia: Intybi sativæ latifolia C. B. Cichorei endivæ Lin. Endive; the roots and leaves.

Endive is raised in gardens for culinary use. It is a gentle cooler and aperient, nearly of the same quality with the *cichorium*. The seeds are ranked among the four lesser cold seeds.

ENULÆ CAMPANÆ seu Helenii radix: Asteris omnium maximæ Tourn. Enula Helenii Lin. Elecampane; the root [*L. E.*]

This is a very large downy plant, sometimes found wild in moist rich soils. The root, especially when dry, has an agreeable aromatic smell: its taste, on first chewing, is glutinous, and as it were somewhat rancid; in a little time it discovers an aromatic bitterness, which by degrees becomes considerably acrid and pungent. Elecampane root possesses the general virtues of alexipharmacs: it is principally recommended for promoting expectoration in humoral asthmas and coughs: liberally taken, it is said to excite urine, and loosen the belly.

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In some parts of Germany, large quantities of this root are candied, and used as a stomachic, for strengthening the tone of the viscera in general, and for attenuating tenacious juices. Spirituous liquors extract its virtues in greater perfection than watery ones: the former scarce elevate any thing in distillation: with the latter an essential oil arises, which concretes into white flakes: this possesses at first the flavour of the elecampane, but is very apt to lose it in keeping. An extract made with water (a preparation now kept in the shops) possesses the bitterness and pungency of the root, but in a less degree than one made with spirit.

EQUISETUM, vide **CAUDA EQUINA**.

ERIGERI seu *Senecionis folia*: *Senecionis minoris vulgaris* C. B. *Senecionis vulgaris*, Lin. Groundsel; the leaves.

This is a common weed, which notwithstanding its being annual is met with at all times of the year. The juice, or an infusion of it in ale, is generally said to be a mild and safe emetic; but unless taken in very large quantity, it has no effect this way. The fresh herb, beaten into a very coarse pulp, and applied externally, cold, to the pit of the stomach, is said to have occasioned strong vomiting: but, as Haller justly suspects, there was probably some fallacy in the observation.

ERUCÆ semen: *Eruca latifolia alba*, sativæ *Dioscoridis* C. B. *Brassica eruca* Lin. Rocket; the seeds.

This was formerly much cultivated in gardens for medicinal use, and for salads: but is at present less common. In appearance, it resembles mustard; but is easily di-

stinguishable by the smoothness of its leaves, and its disagreeable smell. The seeds have a pungent taste, of the mustard kind, but weaker: they have long been celebrated as aphrodisiacs; and may, probably, have in some cases a title to this virtue, in common with other acrid plants.

ERVUM, vide **OROBUS**.

ERYNGII radix: *Eryngii maritimi* C. B. et Lin. Eryngo, or sea-holly; the root [L.]

This plant grows plentifully on some of our sandy and gravelly shores: the roots are slender, and very long; of a pleasant sweetish taste, which, on chewing them for some time, is followed by a light degree of aromatic warmth and acrimony. They are accounted aperient and diuretic, and have also been celebrated as aphrodisiac; their virtues, however, are too weak to admit them under the head of medicines. The candied root is ordered to be kept in the shops.

ERYSIMI folia: *Erysimi vulgaris* C. B. *Erysimi officin.* Lin. Hedge-mustard; the leaves.

This is a low hairy plant, common in waste places and by waysides. The leaves are said to promote expectoration, excite urine and the other fluid secretions, attenuate and dissolve viscid juices, &c. This they are supposed to perform by an acrimonious stimulating quality; but the taste discovers in them only an herbaceous softness void of acrimony: the seeds indeed are considerably pungent, and the roots in some small degree.

ESULA MAJOR et MINOR, vide **TIPTYMALUS**.

EUPATORII CANNABINI
folia:

folia: Eupatorii cannabini C. B. et Lin. Hemp agrimony, water agrimony, or water hemp; the leaves.

This plant is found wild by the sides of rivers and ditches. It has an acrid smell, and a very bitter taste, with a considerable share of pungency. The leaves are greatly recommended for strengthening the tone of the viscera, and as an aperient; and said to have excellent effects in the dropsy, jaundice, cachexies, and scorbutic disorders. Boerhaave informs us, that this is the common medicine of the turfdiggers in Holland, against scurvy, foul ulcers, and swellings in the feet, which they are subject to. The root of this plant is said to operate as a strong cathartic.

EUPATORIUM MESUES,
vide **AGERATUM.**

EUPATORIUM GRÆCORUM, vide **AGRIMONIA.**

EUPHORBIIUM, a gummy resin exuding from a large oriental shrub, *Euphorbia officin.* *Lin.*

It is brought to us immediately from Barbary, in drops of an irregular form; some of which, upon being broken, are found to contain little thorns, small twigs, flowers, and other vegetable matters; others are hollow, without any thing in their cavity: the tears in general are of a pale yellow colour externally, somewhat white withinside: they easily break betwixt the fingers. Lightly applied to the tongue, they affect it with a very sharp biting taste; and upon being held for some time in the mouth, prove vehemently acrimonious, inflaming and exulcerating the fauces, &c. Euphorbium is extremely troublesome to pulverize; the finer part of the powder, which flies off, affecting the head in a violent manner. The

acrimony is so great as to render it absolutely unfit for any internal use: several correctors have been contrived to abate its virulence; but the best of them are not to be trusted to: and as there seems to be no real occasion for it, unless for some external purposes, we think, with Hoffman and others, that it ought to be expunged from the catalogue of internal medicines.

EUPHRASIE *folia: Euphrasie officinarum C. B. et Lin.* Eyebright; the leaves.

This is a very low plant, growing wild in moist fields. It was formerly celebrated as an ophthalmic, both taken internally, and applied externally. Hildanus says, he has known old men of seventy, who had lost their sight, recover it again by the use of this herb: later practitioners, however, have not been so happy as to observe any such good effects from it. At present it is totally, and not unjustly disregarded.

FABÆ *flores & semen: Fabæ flore candido lituris nigris conspicuus Tourn. Viciæ fabæ Lin.* Garden beans; the flowers and seed.

Beans are of greater use for culinary than medicinal purposes: they are a strong flatulent food, sufficiently nutritious, but not easy of digestion, especially when growing old. A water distilled from the flowers has been celebrated as a cosmetic, and still retains its character among some female artists.

FARFARA, vide **TUSSILAGO.**

FERRUM et CHALYBS [*L.*] Iron and steel. 'Iron cemented with animal or vegetable coal, forms steel.'

Steel is accounted less proper for medicinal use than the softer iron, as being more difficultly acted upon
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by the animal-juices and the common menstrua: iron dissolves readily in all acids, and rusts freely in the air, especially if occasionally moistened with water; steel requires a longer time for its solution, and does not rust so easily.

The general virtues of these metals, and the several preparations of them, are, to constringe the fibres, to quicken the circulation, to promote the deficient secretions in the remoter parts, and at the same time repress inordinate discharges into the intestinal tube. After the use of them, if they take effect, the pulse is very sensibly raised; the colour of the face, though before pale, changes to a florid red; the alvine, urinary, and cuticular excretions, are increased. Nidorous eructations, and the fæces voided of a black colour, are marks of their taking due effect.

An aperient virtue is usually attributed to some of the preparations of iron, and an astringent to others; but in reality, they all produce the effects both of aperients and astringents, and seem to differ only in degree. Those distinguished by the name of astringent sometimes occasion a very copious discharge of urine, or a diarrhoea; whilst those called aperient frequently stop these evacuations.

Where either a preternatural discharge, or suppression of natural secretions, proceed from a languor and sluggishness of the fluids, and weakness of the solids; this metal, by increasing the motion of the former, and the strength of the latter, will suppress the flux, or remove the suppression: but where the circulation is already too quick, the solids too tense and rigid, where there is any stricture or spasmodic contraction of the vessels; iron, and all the preparations of it, will aggravate equally both distempers.

Though the different preparations of iron act all in the same manner, yet they are not equally proper in all constitutions. Where acidities abound in the first passages, the crude filings, reduced into a fine powder, prove more serviceable than the most elaborate preparation of them. On the other hand, where there is no acid in the primæ viæ, the metal requires to be previously opened by saline menstrua: hence a solution of iron in acid liquors has in many cases excellent effects, where (as Boerhaave observes) the more indigestible preparations, as the calces made by fire, have scarce any effect at all. If alkalescent juices are lodged in the stomach, this metal, though given in a liquid form, proves at least useless; for here the acid solvent is absorbed by the alkaline matters which it meets with in the body, so as to leave the iron reduced to an inactive calx.

Chalybeate medicines are likewise supposed to differ, independently of differences in the constitution, according to the nature of the acid united with the metal: vegetable acids superadd a detergency and aperient virtue; combined with the vitriolic, it acts in the first passages powerfully as an aperient; whilst the nitrous renders it extremely styptic, and the marine still more so. For the different preparations of iron, see the first and third part of this work.

‘Iron is the only metal which seems naturally friendly to the animal body.

‘Its chief preparations are the prepared filings and rust, the tincture, the salt, and the martial flowers; and these are used principally in cases of weakness and relaxation, whether attended with morbid discharges or morbid suppressions.’

FILIPENDULÆ radix: *Filipendula*
pen

pendula vulgaris, an *Moli Plinii*
C. B. Spirea filipendula, Lin. Drop-
 wort; the root.

This plant grows wild in fields and chalky grounds: the root consists of a number of tubercles, fastened together by slender strings; its taste is rough and bitterish, with a slight degree of pungency. These qualities point out its use in a flaccid state of the vessels, and a sluggishness of the juices: the natural evacuations are in some measure restrained or promoted by it, where the excess or deficiency proceed from this cause. Hence some have recommended it as an astringent in dysenteries, immoderate uterine fluxes, &c. others as a diuretic; and others as an aperient and deobstruent in scrophulous habits. At present it is wholly disregarded.

FILICIS MARIS radix: *Filicis non ramosa dentata* C. B. *Polypodii filicis maris* Lin. Common male fern; the root [E.]

FILICIS FÆMINÆ radix: *Filicis ramosa majoris pinnulis obtusis non dentatis* C. B. Female fern, or brakes; the root.

FILICIS FLORIDÆ, seu Osmundæ regalis, radix: *Filicis ramosa non dentata, floridæ*, C. B. Osmund royal, or the flowering fern; the root.

The roots of these plants (which are the only part directed for medicinal use) have, when first chewed, somewhat of a sweetish glutinous taste, which soon becomes bitterish, subastringent, and nauseous. They are said to be aperient and anthelmintic. Simon Paulli tells us, that they have been the grand secret of some empirics against the broad kind of worms called *tania*; and that the dose is one, two, or three drams of the powder. The third sort is supposed to be the weakest, and the second the strongest; this, therefore, has been gene-

rally made choice of; practice has, however, at length expunged them all except the first [E.]

‘Two or three drams of the powder are taken in the morning, no supper having been taken the night before. It generally sickens a little. A brisk cathartic with calomel is given a few hours after, which sometimes brings off the *tænia* entire; if not, the same course must be followed at due intervals.’

‘FLAMULÆ JOVIS: Clematis rectæ Lin. *folia, flores.* Upright virgin’s bower; the leaves and flowers [E.]

‘Its leaves and flowers are so acrid as to blister. Dr Storck recommends it in venereal, cancerous, and other cutaneous affections, in those headaches, pains of the bones, and wastings of the habit, the consequences of lues venerea. Externally the acrid powder is sprinkled on the ulcers, and the forms for internal use are those of infusion and extract.’

FÆNICULI DULCIS semen: *Feniculi dulcis* C. B. *Anethi fœniculi* Lin. Sweet fennel; the seeds [L. E.]

FÆNICULI VULGARIS folia, radix, semen: *Feniculi vulgaris Germanici* C. B. *Anethi fœniculi var. β.* Lin. Common fennel; the seeds, roots, and leaves [E.]

The sweet fennel is smaller in all its parts than the common, except the seeds which are considerably larger. The seeds of the two sorts differ likewise in shape and colour: those of the common are roundish, oblong, flattish on one side, and protuberant on the other, of a dark almost blackish colour; those of the sweet are longer, narrower, not so flat, generally crooked, and of a whitish or pale yellowish colour. Both sorts are cultivated in our gardens:

dens: the common is a perennial plant: the sweet perishes after it has given seed; nor do its seeds come to such perfection in this climate as those which we receive from Germany.

The seeds of both the fennels have an aromatic smell, and a moderately warm, pungent taste: those of the *feniculum dulce* are in flavour most agreeable, and have also a considerable degree of sweetishness; hence our college have directed the use of these only. They are ranked among the four greater hot seeds, and not undeservedly looked upon as good stomachics and carminatives. A simple water [L.] is prepared from them in the shops; they are ingredients also in the compound juniper-water, garlic-oxymel, mithridate, theriaca, and decoction for glysters [L.]

The root is far less warm, but has more of a sweetish taste, than the seeds: it is one of the five roots called openers; and has sometimes been directed in aperient apozems. Boerhaave says, that this root agrees in taste, smell, and medical qualities, with the celebrated *ginseng* of the Chinese; from which, however, it appears to be very considerably different.

The leaves of fennel are weaker than either the roots or seeds, and have very rarely been employed for any medicinal use.

FÆNI GRÆCI *semen: Fæni græci sativi C. B. Trigonella fæni græci Lin.* Fænugreek; the seeds [L. E.]

This plant is cultivated chiefly in the southern parts of France, Germany, and in Italy; from whence the seeds are brought to us. They are of a yellow colour, a rhomboidal figure; a disagreeable strong smell, and a mucilaginous taste. Their principal use is in cataplasms, fo-

mentations, and the like, and in emollient glysters. They enter the *oleum è mucilaginibus* of the shops; to which they communicate a considerable share of their smell.

FOLIUM INDUM, vide *MA. LABATHRUM*.

FORMICÆ Ants; their bodies and eggs.

These insects are at present of no use with us in medicine, though formerly much celebrated for aphrodisiac virtues, and still employed in the *aqua magnanimitatis*, and other like compositions of foreign dispensaries. It is remarkable, that these animals contain a truly acid juice, which they shed in small drops upon being irritated; by infusing a quantity of live and vigorous ants in water, an acid liquor is obtained nearly as strong as good vinegar. Neumann observes, that on distilling them either with water or pure spirit, a clear limpid oil arises, which has scarce any taste, or at least is not hot or pungent like the essential oils of vegetables.

FRAGARIÆ *folia, fructus: Fragariæ ferentis fragrarubra J. B. Fragariæ vesica Lin.* The strawberry bush; its leaves and fruit.

The leaves are somewhat styptic, and bitterish; and hence may be of service in debility and laxity of the viscera; and immoderate secretions, or a suppression of the natural evacuations, depending thereon: they are recommended in hæmorrhagies and fluxes; and likewise as aperients, in suppressions of urine, obstructions of the viscera, in the jaundice, &c. The fruit is in general very grateful both to the palate and stomach: like other fruits of the dulco-acid kind, they abate heat, quench thirst, loosen the belly, and promote urine; but do not afford much

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nourishment. Geoffroy observes, that the urine of those who eat liberally of this fruit, becomes impregnated with its fragrant smell.

FRANGULA, vide ALNUS NIGRA.

FRAXINELLÆ, seu Dictamni albi Lin. radix: Dictamni vulgo five fraxinellæ C. B. White or bastard dittany; the root [E.]

This plant grows wild in the mountainous parts of France, Italy, and Germany; from whence the cortical part of the root, dried and rolled up into quills, is sometimes brought to us. This is of a white colour; a weak, not very agreeable smell; and a durable bitter, lightly pungent taste. It is recommended as an alexipharmac; but not regarded by common practice, nor often kept in the shops.

FRAXINI cortex et semen: Fraxini excelsioris C. B. Fraxini vulgioris J. B. et Lin. The ash tree; its bark and seeds.

The bark of this tree is moderately astringent, and as such has sometimes been made use of: the seeds, which are somewhat acrid, have been employed as aperients. There are so many other medicines more agreeable, and more efficacious for these intentions, that all the parts of the ash tree have long been neglected.

FULIGO lignorum combustorum. Wood foot [L. E.]

This concrete is of a shining black colour, a disagreeable smell, and an acrid, bitter, nauseous taste. Its chief use is in hysteric and other nervous cases, in which it is sometimes given in conjunction with the fetid gums: it gives name to a tincture of this kind in the shops. Its virtues are extracted both by watery and spirituous liquors, each of which, if the foot is of a good kind, dissolve

about one-sixth. Soot is said to differ greatly in quality according to the wood it was produced from: the more refinous the wood, the more the soot abounds with bitter oily matter. On chemical analysis, it yields volatile and fixed alkali, empyreumatic oil, and earth.

FUMARIÆ folia: Fumariæ officinarum Dioscoridis C. B. et Lin. Fumitory; the leaves [E.]

This is a common weed in shady cultivated grounds, producing spikes of purplish flowers in May and June. It is very juicy, of a bitter taste, without any remarkable smell. The medical effects of this herb are, to strengthen the tone of the bowels, gently loosen the belly, and promote the urinary and other natural secretions. It is principally recommended in melancholic, scorbutic, and cutaneous disorders; for opening obstructions of the viscera, attenuating and promoting the evacuation of viscid juices. Frederick Hoffman had a very great opinion of it as a purifier of the blood; and assures us, that in this intention scarce any plant exceeds it. Both watery and spirituous menstrua extract its virtues.

GALANGÆ MINORIS radix. Galangal; the root of *Kempferia galanga* Lin. brought from China.

This root comes to us in pieces scarce an inch long, and not half so thick, full of joints, with several circular rings on the outside; of an aromatic smell, and a bitterish, hot, biting taste. Galangal is a warm stomachic bitter: it has been frequently prescribed in bitter infusions, but the flavour it gives is not agreeable.

GALBANUM [L. E.]

This is the concrete juice of an African plant (*Bubon galbanum* Lin.)

The juice, as brought to us, is semipellucid, soft, tenacious; of a strong, and, to some, unpleasant smell; and a bitterish warm taste: the better sort is in pale coloured masses, which, on being opened, appear composed of clear white tears. Geoffroy relates, that a dark greenish oil is to be obtained from this simple by distillation, which, upon repeated rectifications, becomes of an elegant sky blue colour. The purer sorts of galbanum are said by some to dissolve entirely in wine, vinegar, or water; but these liquors are only partial menstrua with regard to this drug; nor do spirit of wine, or oils, prove more effectual in this respect: the best dissolvent is a mixture of two parts spirit of wine, and one of water. Galbanum agrees in virtue with gum ammoniacum; but is generally accounted less efficacious in asthma, and more so in hysterical complaints. It is an ingredient in the gum pills, species è scordio, mithridate, theriaca, confectio Paulina, maturing cataplasm [L.], gum-pills and antihysterical plaster [E.]

GALEGÆ folia: *Galega vulgaris floribus cæruleis* C. B. *Galega officinalis* Lin. Goats rue; the herb.

This is celebrated as an alexipharmac; but its sensible qualities discover no foundation for any virtues of this kind: the taste is merely leguminous; and in Italy (where it grows wild) it is said to be used as food.

GALLÆ [L. E.] Galls.

These are excrescences found in the warmer countries, upon the oak tree: they are produced by a kind of insect (the cynips), which wounds the young buds or branches, and afterwards serve as a lodgement for its eggs: the animal within the gall eats

its way through; those which have no hole are found to have the insect remaining in them. The best galls come from Aleppo: these are not quite round and smooth like the other sorts, and have several tubercles on the surface. Galls have a very austere styptic taste, without any smell: they are very strong astringents, and as such have been sometimes made use of both internally and externally, but are not much taken notice of by the present practice.

‘Some recommend an ointment of powdered galls and hogs-lard as very effectual in certain painful states of hæmorrhoids; and it is alleged, that the internal use of galls has cured intermittents after the bark has failed. A mixture of galls with a bitter and aromatic has been proposed as a substitute for the bark.’

GALLII folia: *Gallii lutei* C. B. *Gallii veri* Lin. Ladies bed-straw, or cheese-rennet; the herb.

This herb has a subacid taste, with a very faint, not disagreeable smell: the juice changes blue vegetable infusions of a red colour, and coagulates milk, and thus discovers marks of acidity. It stands recommended as a mild styptic, and in epilepsy; but has never been much in use.

GAMBOGIA [L. E.]

Gamboge; a solid concrete juice (of the *Cambogia gutta* Lin.) brought from the East-Indies in large cakes or rolls. The best sort is of a deep yellow or orange colour, breaks shining and free from dross: it has no smell, and very little taste, unless kept in the mouth for some time, when it impresses a slight sense of acrimony. It immediately communicates to spirit of wine a bright golden colour, and almost entirely dissolves in it; Geoffroy

froy says, except the sixth part. Alkaline salts enable water to act upon this substance powerfully as a menstruum: the solution made by their means is somewhat transparent, of a deep blood red colour, and passes the filtre: the dulcified spirit of sal ammoniac readily and entirely dissolves it, and takes up a considerable quantity; and what is pretty remarkable, this solution mixes either with water or spirit, without growing turbid.

Gamboge evacuates powerfully both upwards and downwards; Hoffman and some others condemn it as acting with too great violence, and occasioning dangerous hypercharles; whilst others are of a contrary opinion. Geoffroy seems particularly fond of this medicine, and informs us, that he has frequently given it, from two to four grains, without its proving at all emetic; that from four to eight grains, it both vomits and purges, without violence; that its operation is soon over; and that if given in a liquid form, and sufficiently diluted, it stands not in need of any corrector; that in the form of a bolus or pill, it is most apt to prove emetic, but very rarely has this effect if joined along with *mercurius dulcis*. He nevertheless cautions against its use where the patient cannot easily bear vomiting.

It has been used in dropsy with cream of tartar or jalap, or both, to quicken their operation. It is also recommended by some to the extent of fifteen grains with an equal quantity of vegetable alkali in cases of the tape-worm. The dose is ordered in the morning; and if the worm is not expelled in two or three hours, it is repeated even to the third time with safety and efficacy, as is said, even in delicate habits.

GENISTÆ summitates: *Cytisogenista scopariæ vulgaris flore luteo* Tourn. *Spartii scoparii* Lin. Broom; the tops [E.]

The leaves of this shrub have a nauseous bitter taste: decoctions of them loosen the belly, promote urine, and stand recommended in hydropic cases.

The flowers are said to prove cathartic in decoction, and emetic in substance; though in some places, as Lobel informs us, they are commonly used, and in large quantity, in salads, without producing any effect of this kind. The qualities of the seeds are little better determined: some report, that they purge almost as strongly as hellebore, in the dose of a dram and half; whilst the author abovementioned relates, that he has given a decoction of two ounces of them as a gentle emetic.

An infusion of a dram of well powdered and sifted broom-feed for twelve hours in a glass and a half of rich white-wine taken in the morning fasting, is recommended lately in an anonymous pamphlet as a sovereign remedy in dropsy. The patient is afterwards to walk or ride for an hour and an half, and then to swallow two ounces of olive oil. This method is to be repeated every other day, or once in three days, till the cure is completed.

GENTIANÆ radix: *Gentiane majoris luteæ* C. B. *Gentianæ luteæ* Lin. Gentian; the root [L. E.]

This plant is found wild in some parts of England: but the dried roots are most commonly brought from Germany, &c. they should be chosen fresh, and of a yellow or bright gold colour within. This root is a strong bitter; and as such, very frequently made use of in practice: in taste it is less exceptionable than

most of the other substances of this class: infusions of it, flavoured with orange peel, are sufficiently grateful. It is the capital ingredient in the bitter wine, tincture, and infusion of the shops. An extract made from it is likewise an officinal preparation.

‘ This useful bitter is not used in powder, as it loses considerably by the drying which it requires.’

A poisonous root was some years ago discovered among some of the gentian brought to London; the use of which occasioned violent disorders, and in some instances death. This is easily distinguishable by its being internally of a white colour, and void of bitterness. This poisonous simple seems to be the root of the *thora valdensis* of Ray, the *aconitum primum pardalianches* of Gesner; a plant which Lobel informs us the inhabitants of some parts of the Alps used formerly to empoison darts with.

‘ *GEOFFRÆÆ cortex*: *Geoffrææ inermis* Phil. Transf. vol. 67. tab. x. Cabbage-bark, or worm-bark tree; the bark [E.]

‘ The bark of this tree, which grows in the low savannahs of Jamaica, is of a grey colour externally, but black and furrowed on the inside. It has a mucilaginous and sweetish taste, and a disagreeable smell. It is given in cases of worms, in form of powder, decoction, syrup, and extract. The decoction is preferred; and is made by slowly boiling an ounce of the fresh-dried bark in a quart of water, till it assume the colour of Madeira wine. This sweetened is the syrup; evaporated, it forms an extract. It commonly produces some sickness and purging; sometimes violent effects, as vomiting, delirium, and fever. These last are said to be owing to an over-dose, or to the drinking of

cold water; and are relieved by the use of warm-water, castor oil, or a vegetable acid. It should always be begun in small doses.’

GERANII BATRACHOIDIS folia. *Geranii pratensis* Lin. Crowfoot cranebill; the leaves.

GERANII ROBERTIANI Lin. folia. Herb Robert; the leaves.

These plants are found wild, the first in hedges, the second in moist meadows. The leaves have an austere taste, and have hence been recommended as astringents; but they have long been disregarded in practice.

GINSENG [E.] Panax quinquefolium Lin. A small root brought from North America, and sometimes from China; an inch or two in length, taper, finely striated, of a whitish or yellowish colour. It has a very sweet taste, accompanied with a slight bitterishness and warmth.

The Chinese are said to have a very extraordinary opinion of the virtues of this root, and to look upon it as an universal restorative, in all decays, from age, intemperance, or disease. The great value, there set upon it, has prevented its being exported from thence into other countries, and its discovery in North America is but of late date, so that among us it has hitherto been very rarely made use of; although, from what can be judged of it from the taste, it seems to deserve some regard, especially as it is now procurable in plenty.

GITH, vide *NIGELLA*.

GLASTI folia: *Isatidis sativa vel latifolia* C. B. Woad; the leaves.

This plant is cultivated for the use

use of the dyers; but is never employed for any medicinal purposes. The virtues attributed to it are those of an astringent.

GLADIOLI LUTEI radix:

Iridis palustris lutea, sive acori adulterini J. B. *Acori vulgaris* pharm. Aug. et Wirt. *Iridis palustris* [E.] *Iridis pseudacori* Lin. Yellow water-flag, bastard acorus, or water flower-de-luce; the roots [L.]

This grows common by the banks of rivers, and in other watery places. The root has a very acrid taste, and proves, when fresh, a strong cathartic: its expressed juice, given to the quantity of eighty drops every hour or two, and occasionally increased, has occasioned a plentiful evacuation, after jaundice, gamboge, &c. had proved ineffectual: (See the Edinburgh essays, vol. v. art. 8. Abridg. vol. i. page 202.) By drying, it loses its acrimony and purgative virtue. The *pulvis ari* of our dispensatory contains about one fifth of the dry root.

GLYCIRRHIZÆ radix:

Glycyrrhizæ siliquosæ vel Germanicæ C. B. *Glycyrrhizæ glabræ* Lin. Liquorice; the root [L. E.]

This is produced plentifully in all the countries of Europe: that which is the growth of our own is preferable to such as comes from abroad; this last being generally mouldy, which this root is very apt to become, unless kept in a dry place. The powder of liquorice usually sold is often mingled with flower, and I fear too often with substances not quite so wholesome: the best sort is of a brownish yellow colour (the fine pale yellow being generally sophisticated), and of a very rich sweet taste, much more agreeable than that of the fresh root. Liquorice

is almost the only sweet that quenches thirst; whence it was called by the Greeks *adipsen*. Galea takes notice, that it was employed in this intention in hydropic cases, to prevent the necessity of drinking. Mr Fuller, in his *Medicina Gymnasica*, recommends this root as a very useful pectoral, and says it excellently softens acrimonious humours; at the same time that it proves gently detergent; and this account is warranted by experience. It is an ingredient in the pectoral syrup, pectoral troches, the compound lime waters, decoction of the woods, compound powder of gum tragacanth, lenitive electuary, and theriaca. An extract is directed to be made from it in the shops, but this preparation is brought chiefly from abroad, though the foreign extract is not equal to such as is made with proper care among ourselves.

GRAMINIS CANINI radix:

Graminis canini arvensis, sive graminis Dioscoridis C. B. *Tritici repentis* Lin. Quick-grass; the roots.

Grass roots have a sweet roughish taste. They are principally recommended in aperient spring drinks, for what is called purifying and sweetening the blood.

GRANA PARADISI:

Cardamomum majus semine piperato Geoffroi; *Amomum grana paradisi* Lin. Grains of paradise: a fruit brought from the East-Indies.

This fruit is about the size of a fig, divided internally into three cells, in each of which are contained two rows of small seeds like cardamoms. These seeds are somewhat more grateful, and considerably more pungent, than the common cardamoms, approaching in this respect to pepper, with which they agree also in their pharma-

centual properties; their pungency residing, not in the distilled oil, as that of cardamom seeds does, but in the resin extracted by spirit of wine.

GRANATI cortex: *Fructus Mali punice sativæ C. B. Punica granati var. β. Lin.* The rind of the pomegranate called *malicorium* [L. E.]

The pomegranate tree is sometimes met with in our gardens; but the fruit, for which it is chiefly valued, rarely comes to such perfection as in warmer climates. This fruit has the general qualities of the other sweet summer fruits, allaying heat, quenching thirst, and gently loosening the belly. The rind is a strong astringent, and as such is occasionally made use of.

GRATIOLÆ folia: *Gratiolæ centauricidis C. B. Gratiolæ officinalis Lin.* Hedge hyssop; the leaves [E.]

This is a small plant, met with, among us, only in gardens. The leaves have a very bitter, disagreeable taste: an infusion of a handful of them when fresh, or a dram when dried, is said to operate strongly as a cathartic. Kramer reports (*Tentam. botanic. p. 18.*) that he has found the root of this plant a medicine similar in virtue to ipecacuanha.

This herb has been mentioned as useful in the venereal disease.

GUAIACI lignum, cortex, gummi: *Guaiaci Americani primi fructu aceris, sive legitimi Breyn. prodr. Guaiaci officinalis Lin.* Guaiacum, a tree growing in the warmer parts of the Spanish West Indies; its wood, bark, and resin called gum guaiacum [L. E.]

The wood is very ponderous, of a close compact texture; the outer part is of a yellow colour, the heart

of a deep blackish green, or variegated with black, green, pale and brown colours: the bark is thin, smooth, externally of a dark greyish hue: both have a lightly aromatic, bitterish, pungent taste; the bark is somewhat the weakest. The resin (which exudes from incisions made in the trunk of a tree) is brought to us in irregular masses, usually friable, of a dusky greenish, and sometimes of a reddish cast, with pieces of the wood among them: its taste is more acrid and pungent than that of the wood or bark.

Their general virtues are those of a warm, stimulating medicine: they strengthen the stomach and other viscera; and remarkably promote the urinary and cuticular discharge: hence in cutaneous defecations, and other disorders proceeding from obstructions of the excretory glands, and where sluggish ferous humours abound, they are eminently useful; rheumatic and other pains have often been relieved by them. They are also laxative. The resin is the most active of these drugs; and the efficacy of the others depends upon the quantity of this part contained in them: the resin is extracted from the wood in part by watery liquors, but much more perfectly by spirituous ones; the watery extract of this wood, kept in the shops, proves not only less in quantity, but considerably weaker than one made with spirit. This last extract is of the same quality with the native resin, and differs from that brought to us only in being purer. The gum, or extracts, are given from a few grains to a scruple or half a dram, which last dose proves for the most part considerably purgative. The official preparations of guaiacum are an extract of the wood [L.], a solution of the gum in rectified spirit of wine [L.], and a solution in volatile spirit [L. E.], as also an empyreumatic

matic oil distilled from the wood. The wood is an ingredient in the compound lime-water [L.], the gum in the aromatic pills [L.], cephractic pills [L.], and ethiopic pills [E.], and the compound oil of balsam of Copaiba [L.]

Guaiac in form of decoction has been said to cure the venereal disease; and in this country it is frequently used as an adjuvant to mercury. The resin dissolved in rum, or combined with water, by means of mucilage or yolk of egg, or in the form of the volatile tincture or elixir, is much employed in gout and chronic rheumatism. The tincture or elixir has been given to the extent of half an ounce twice a day, and is sometimes usefully combined with laudanum.

GUMMI AMMONIACUM,
vide **AMMONIACUM.**

GUMMI ARABICUM [L.E.] Gum Arabic; a concrete gum, exuding from the Egyptian acacia tree (*Mimosa nilotica* Lin.) This is brought to us from Turkey, in small irregular masses or strings, of a pale yellowish colour. The true gum Arabic is rarely to be met with in the shops; gum senega or senica, which comes from the coasts of Guinea, being usually sold for it; this greatly resembles the other, and perhaps, as Dale conjectures, exudes from a tree of the same kind: it is generally in large pieces, rough on the outside; and in these circumstances possibly consists the only difference betwixt the two; altho' the former is held to be the purer and finer gum, and therefore preferred for medicine; and the latter the strongest, most substantial and cheapest, and consequently more employed for mechanic uses. The virtues of this gum are the same with those of gummy and mucila-

ginous substances in general: it is given from a scruple to two drams, in hoarsenesses, a thin acrimonious state of the juices, and where the natural mucus of the intestines is abraded. It is an ingredient in the white decoction, chalk julep, the compound powders of bole, scordium, amber, gum tragacanth, the common emulsion, mithridate, theriaca, and some of the troches.

GUMMI CERASORUM:
Cherry-tree gum.

There is not any medical difference betwixt this and the preceding. Some have supposed that all the gum brought to us from the East, under the name of *Arabic*, is no other than the gum of cherry, plum, and other trees common among ourselves. This opinion is nevertheless erroneous: for these trees, as Geoffroy observes, do not grow in the countries from whence gum Arabic is brought; whilst the *acacia* are very common there.

GUMMI ELEMI, vide **ELEMI.**

GUMMI TRAGACANTHÆ [L.E.] *Astragali tragacantha* Lin. The gum of the tragacanth, a thorny bush growing in Crete, Asia, and Greece. This gum is of a much stronger body than either of the foregoing, and does not so perfectly dissolve in water. A dram will give a pint of water the consistence of a syrup, which a whole ounce of gum Arabic is scarce sufficient to do. Hence its use for forming troches, and the like purposes, in preference to the other gums. It gives name to an officinal powder, and is an ingredient in the compound powders of cerufs and amber.

GUTTA GAMBA, vide **GAMBogia.**

HÆMATITES *Lapis* [L.] Hematites, or bloodstone.

This is an elegant iron ore, extremely hard, of a dark reddish or yellowish colour: it is found either along with other ores of iron, or in distinct mines by itself. With regard to its medical virtues, we conceive they do not vary from those experienced from rust, and the common croci of iron, notwithstanding the extraordinary opinion which many have entertained of it; as of its curing ulcers of the lungs, which Geoffroy says the hematites dries and heals.

• **HELICACABUM**, vide **AL-
MEKENGİ**.

HEDERÆ ARBOREÆ *folia, bacca, et gummi seu resina*: *Hedera communis majoris Rati*; *Hedera helica Lin.* Ivy; the leaves, berries, and resin called gum hederæ.

This is a climbing shrubby plant, growing commonly from the trunks of trees, or on old walls. The leaves have very rarely been given internally; notwithstanding they are recommended (in the *Ephem. natur. curios.* vol. ii. obs. 120.) against the atrophy of children; their taste is nauseous, acrid, and bitter. Externally they have sometimes been employed for drying and healing ichorous sores, and likewise for keeping issues open. The berries were supposed by the ancients to have a purgative and emetic quality; later writers have recommended them in small doses, as diaphoretics and alexipharmacs; and Mr Boyle tells us, that in the London plague the powder of them was given with vinegar, with good success, as a sudorific. It is probable the virtue of the composition was rather owing to the vinegar than to the powder. The resin was ranked by

the ancients (if their *δακρυον το κισσου* was the same with our *gummi hederæ*) among the depilatories; from this class, which it certainly had no title to, it has since been removed to that of conglutinaters of wounds, to which it has no very just one.

HEDERÆ TERRESTRIS *folia*: *Hedera terrestris vulgaris C. B.* *Glechomatis hederacei Lin.* Ground-ivy; the leaves [E.]

Ground-ivy is a low plant, frequent in hedges and shady places. It has an aromatic, though not very agreeable smell; and a quick, bitterish, warm taste. This herb is an useful corroborant, aperient, and detergent; and hence stands recommended against laxity, debility, and obstructions of the viscera: some have had a great opinion of it for cleansing and healing ulcers of the internal parts, even of the lungs; and for purifying the blood. It is customary to infuse the dried leaves in malt liquors; a practice not to be commended, though it readily communicates its virtues, and likewise helps to fine them down: scarce any other herb has this effect more remarkably than ground-ivy.

HELENIUM, vide **ENULA
CAMPANA**.

HELLEBORI ALBI *radix*: *Hellebori albi flore subviridi C. B.* *Veratri albi Lin.* *Veratri* [E.] White hellebore; the root [L.E.]

This plant grows spontaneously in Swisserland, and the mountainous parts of Germany. The root has a nauseous, bitterish, acrid taste, burning the mouth and fauces: wounded when fresh, it emits an extremely acrimonious juice, which mixed with the blood, by a wound, is said to prove very dangerous: the powder of the dry root, applied to

an issue, occasions violent purging; snuffed up the nose, it proves a strong, and not always a safe sternutatory. This root, taken internally, acts with extreme violence as an emetic; and has been observed, even in a small dose, to occasion convulsions, and other terrible disorders. The ancients sometimes employed it in very obstinate cases, and always made this their last resource. Modern practice seems to have almost entirely rejected its internal use, though I am informed that some have lately ventured upon so large a dose as a scruple, in maniacal cases, and have found good effects from it after the stronger antimonial preparations had been given in vain. A tincture and honey of it are kept in the shops [L.]

HELLEBORI NIGRI radix:

Hellebori nigri flore roseo C. B. et Lin. Melampodii [E.] Black hellebore; the roots [L. E.]

This plant grows wild in the mountainous parts of Swisserland, Austria, and Stiria: the earliness of its flowers, which sometimes appear in December, has gained it a place in our gardens.

In some parts of Germany, a species of black hellebore has been made use of, which not unfrequently produced violent, and sometimes deleterious effects: this the Wirtemberg college particularly caution against, though without mentioning any marks by which it may be distinguished, or even giving the precise name of the plant. It appears to be the fetid black hellebore of C. B. called in England, where it grows wild, setterwort, settlewort, or bastard hellebore: the roots of this may be distinguished from the officinal sort by their being less black. The roots of the poisonous aconites resemble in appearance those of the black hellebore; and

in the Bresslaw collections we find some instances of fatal effects occasioned by mistaking the former for the latter: these also are happily discoverable by their colour; the *aconitum* being lighter coloured than even the palest of the black hellebores. The faculty of Paris, by allowing the use of one of the paler hellebores (the green-flowered, which grows wild in England, and is called by our farriers peg-root), have in some measure deprived the shops of the benefit of this criterion: but the London college have directed the darkest coloured of all the roots of this class. Since therefore the two noxious roots which the buyer is most apt to mistake for this, are distinguishable from it by their colour, but have no other external mark by which they may be with certainty known, particular regard ought to be had to this circumstance; only the deepest black being chosen, and all the paler roots rejected.

The taste of hellebore is acrid and bitter. Its acrimony, as Dr. Grew observes, is first felt on the tip of the tongue, and then spreads immediately to the middle, without being much perceived on the intermediate part: on chewing it for a few minutes, the tongue seems benumbed, and affected with a kind of paralytic stupor, as when burnt by eating any thing too hot: the fibres are more acrimonious than the head of the root which they issue from. Black hellebore root, taken from fifteen grains to half a dram, proves a strong cathartic; and as such has been celebrated for the cure of maniacal, and other disorders proceeding from what the ancients called *atra bilis*: in which cases, medicines of this kind are doubtless occasionally of use, though they are by no means possessed of any specific power. It does not
bow.

However appear, that our black hellebore acts with so much violence as that of the ancients: whence many have supposed it to be a different plant; and indeed the descriptions which the ancients have left us of their hellebore, do not agree to any of the sorts usually taken notice of by modern botanists. Another species has been discovered in the eastern countries, which Tournefort distinguishes by the name of *helleborus niger orientalis*, *amplissimo folio, caule præalto, flore purpurascens*, and supposes to be the true ancient hellebore, from its growing in plenty about mount Olympus, and in the island of Anticyra, celebrated of old for the production of this antimaniacal drug: he relates, that a scruple of this sort, given for a dose, occasioned convulsions.

Our hellebore is at present looked upon principally as an alterative; and in this light is frequently employed, in small doses, for attenuating viscid humours, promoting the uterine and urinary discharges, and opening inveterate obstructions of the remoter glands: it often proves a very powerful emmenagogue in plethoric habits, where steel is ineffectual or improper. An extract made from this root with water, is one of the mildest, and for the purposes of a cathartic the most effectual preparation of it: this operates sufficiently, without occasioning the irritation which the pure resin is accompanied with. A tincture drawn with proof spirit [E], contains the whole virtue of the hellebore, and seems to be one of the best preparations of it when designed for an alterative: this tincture, and the extract, are kept in the shops.

The melampodium is the basis of Bacher's tonic pills for the dropsy. The root is ordered to be macerated in rectified spirit and wine, the liquor expressed is repeatedly

mixed with water and duly evaporated. This is made up into pills with an extract of myrrh and powder of *carduus benedictus*. They are said to be cathartic and diuretic, and at the same time strengtheners of the solids.

HELXINE, vide PARIETARIA.

HEPATICÆ NOBILIS *folia: Ranunculi tridentati verni, flore simpliciter ceruleo Tourn. Anemones Hepaticæ Lin.* Noble liverwort; the leaves.

This herb has a place in our gardens on account of the beauty and early appearance of its flowers. It is a cooling, gentle restraining herb; and hence recommended in a lax state of the fibres as a corroborant.

HEPATICA TERRESTRIS, vide LICHEN.

HERBÆ PARIS *folia et fructus: Solani quadrifolii bacciferi C.B. Paridis quadrifolii Lin.* Herb Paris, truelove, or oneberry; the leaves and fruit.

This is a low plant growing wild in shady woods. It is said, but on no good grounds, to be alexipharmac: Gesner relates, that its juice has killed poultry; and its smell and taste manifestly agree with those of the narcotic herbs.

HERMODACTYLUS. *iris tuberosa Lin. radix.* Hermodactil; a root brought from Turkey. It is of the shape of a heart flattened, of a white colour, compact, yet easy to cut or powder; of a viscous sweetish taste, with a light degree of acrimony.

Hermodactils were of great repute among the ancients as a cathartic; but those we now meet with in the shops have very little pur-

purgative virtue; Neumann declares he never found them to have any effect at all.

HENRIARIÆ folia: *Polygoni minoris five millegrana majoris glabra* C. B. *Herniaria glabra* Lin. Rupturewort; the leaves.

This is a low herb, growing wild in sandy and gravelly grounds. It is a very mild restringent, and may, in some degree, be serviceable in disorders proceeding from a weak flaccid state of the viscera: the virtue which it has been most celebrated for, it has little title to, that of curing hernias.

HIPPOCASTANI. *Æsculi hippocastani* Lin. *fructus*. Horse-chestnut; the fruit [E.]

The fruit has been used as food for sheep and poultry, and as soap for washing. It was much employed in powder as a sternutatory by an itinerant oculist, and has been recommended by some others in certain states of ophthalmia, headache, &c. in which errhines are indicated. The bark is mentioned as a cure for intermittents.

HIPPOGLOSSI folia: *Rusci angustifolii, fructu folio innascente* Tourn. *Rusci hypoglossi* Lin. Double-tongue; the leaves.

This is met with only in gardens, where plants are cultivated for curiosity. It has rarely been taken notice of by medicinal writers.

HIPPOSELINI, seu Smyrnii, folia, radix, semen: *Hipposelini Theophrasti, vel Smyrnii Discoridis, C. B. Smyrnii olusatris* Lin. Alexanders; the leaves, root, and seeds.

This is an umbelliferous plant, differing from the others of that class, in bearing a large tumid black seed: it grows by the seaside, upon rocks. In medical qua-

lities it agrees with *apium* (smallage) except that the *hipposelinum* is somewhat stronger.

HIRUNDINARIA, vide VIN-CETOXICUM.

HORDEI semen: *Hordei distichi, quod spica binas ordines habeat* Plinio C. B. *Hordei vulgaris* Lin. Common barley [L.]

HORDEUM GALLICUM five MUNDATUM. French barley, or the common barley freed from the shell.

HORDEUM PERLATUM dictum [L.] Pearl barley; prepared in Germany and Holland, by grinding the shelled barley into little round granules, which appear of a kind of pearly whiteness.

Barley, in its several states, is more cooling, less glutinous, and less nutritious than wheat or oats; among the ancients, decoctions of it were the principal aliment and medicine in acute diseases. The London college direct a decoction of pearl barley, and make common barley an ingredient in the pectoral decoction.

HORMINI SATIVI, seu Sclarea, folia, semen: *Hormini sclarea dicti* C. B. *Salvia sclarea* Lin. Garden clary; the leaves and seeds.

These have a warm, bitterish pungent taste; and a strong, not very agreeable smell: the touch discovers in the leaves a large quantity of glutinous or resinous matter. They are principally recommended in the fluor albus, and other female weaknesses, in hysteric disorders, and in flatulent collics.

HYBERNICUS LAPIS: *Tegula vel ardesia Hybernica.* Irish slate.

This is a blackish fossil stone brought from Ireland. It seems to consist of an argillaceous or solar earth,

earth, slightly impregnated with sulphur and iron; and may be presumed to possess in a low degree the virtues of the other ferrugineous minerals.

HYDRARGYRUS, vide **ARGENTUM VIVUM**.

HYDROLAPATHUM, vide **LAPATHUM**.

HYOSCYAMI *folia: Hyoscyami albi majoris vel tertii Dioscoridis et quarti Plinii C. B. Hyoscyami albi Lin.* White henbane; the leaves.

This is met with only in botanic gardens.

HYOSCYAMI NIGRI *herba, semen: Hyoscyami vulgaris vel nigri C. B. Hyoscyami nigri Lin.* The common wild or black henbane; the herb and seeds [E.]

These plants stand recommended for sundry external purposes, and by some likewise internally against dysenteries and hemorrhagies: but there are so many examples of their pernicious effects, that common practice has very deservedly rejected them. They are strong and virulent narcotics, greatly disorder the senses, occasioning deliria and madness, either deadly, or of long duration. Haller tells us of one who eat of all the poisons of the physic garden, the napelli, apocyna, bella donna, without injury; but was mastered by this: that after its common effects as a narcotic had abated, a paralysis of one of the legs remained; and that Boerhaave had his senses disordered by only making a plaster from this plant. There are other examples also, though from less unexceptionable authorities, of henbane proving narcotic, though none of it was received into the body.

Some employ the hyoscyamus niger externally for softening and

allaying pain in cases of scirrhus, in form of cataplasm of the leaves; of plaster, made by boiling the oil of the seeds with the juice of the herb, and adding wax, turpentine, and powder of the herb; and in form of ointment made of the leaves and hogslard. In open ulcers, a powder of the leaves is also sprinkled on the part. Internally, it is chiefly used in form of an extract from the leaves, which appears to be much stronger than that from the seeds. It has been given in various nervous affections, as mania, melancholia, epilepsy, hysteria, colic, &c.; also in obstinate dry coughs, glandular tumours, hemorrhagies, and in ulcers of the urinary passages. It commonly produces sweat, and sometimes an eruption of pustules over the body, generally sound sleep succeeded by a serenity of mind and an increased vigour of body; though sometimes, instead of these, vertigo, headach, and weakness. In some it occasions vomiting, colic-pains, a copious flow of urine, and purging. It is anodyne like opium; and like cicuta, is free from its constipating effect. Its dose has been increased from half a grain to half a dram in the day.

HYPERICI *folia, flores, semen: Hyperici vulgaris C. B. Hyperici perforati Lin.* St John's wort; the leaves and flowers [L.]

This plant grows wild in woods and uncultivated places throughout England. Its taste is rough and bitterish; the smell disagreeable. Hypericum has long been celebrated as a corroborant, diuretic, and vulnerary; but more particularly in hysterical and maniacal disorders: it has been reckoned of such efficacy in these last, as to have thence received the name of *fuga demonum*. It is observable, that the flowery tops tinge expressed oils of a red colour (which very few vegetable sub-

substances will do) and communicate a blood red to rectified spirit. The oil tinged by them is kept in the shops. [L.]

HYPOCISTIDIS *succus inspissatus*: *Hypocistidis sub cisto* C. B. *Asari Hypocistidis* Lin. Juice of hypocistis [L.]

Hypocistis is a fleshy production, growing in the warmer climates from the roots of different kinds of cisti. Its inspissated juice is an astringent, similar to acacia, but somewhat stronger. At present it is scarce otherwise made use of, than as an ingredient in some of the old compositions, viz. mithridate, theriaca, and the compound powder of of amber [L.]

HYSSOPI *folia, herba*: *Hyssopi officinarum, cæruleæ sive spicatæ* C. B. *Hyssopi officinalis* Lin. Hyssop; the leaves [L.], and the herb [E.]

The leaves of hyssop have an aromatic smell, and a warm pungent taste. Besides the general virtues of aromatics, they are particularly recommended in humoral asthma, coughs, and other disorders of the breast and lungs; and said to notably promote expectoration.

JACOBÆÆ *folia*: *Jacobææ vulgaris laciniatæ* C. B. *Senecionis Jacobææ* Lin. Ragwort, or segrum; the leaves.

This ragged leaved plant grows wild by road-sides and uncultivated places. Its taste is roughish, bitter, pungent, and extremely unpleasant: it stands strongly recommended by Simon Paulli against dysenteries; but its forbidding taste has prevented its coming into practice.

JALAPII [L.] **JALAPÆ** [E.] *radix*: *Convolvuli jalapæ* Lin. Jalap.

Jalap is the root of an American convolvulus, brought to us in thin

transverse slices, from Xalapa, a province of New Spain. Such pieces should be chosen as are most compact, hard, weighty, dark coloured, and abound most with black circular striæ. Slices of bryony root are said to be sometimes mixed with those of jalap: these may be easily distinguished by their whiter colour, and less compact texture. This root has no smell, and very little taste upon the tongue; but when swallowed, it affects the throat with a sense of heat, and occasions a plentiful discharge of saliva.

Jalap in substance, taken in a dose of about half a dram (less or more, according to the circumstances of the patient) in plethoric, or cold phlegmatic habits, proves an effectual, and in general a safe purgative, performing its office mildly, seldom occasioning nausea or gripes, which too frequently accompany the other strong cathartics. In hypochondriacal disorders, and hot bilious temperaments, it gripes violently, if the jalap be good; but rarely takes due effect as a purge. An extract made by water purges almost universally, but weakly; and at the same time, has a considerable effect by urine: the root remaining after this process, gripes violently. The pure resin, prepared by spirit of wine, occasions most violent gripings, and other terrible symptoms, but scarce proves at all cathartic: triturated with sugar, or with almonds into the form of an emulsion, or dissolved in spirit and mixed with syrups, it purges plentifully in a small dose, without occasioning much disorder: the part of the jalap remaining after the separation of the resin, yields to water an extract, which has no effect as a cathartic, but operates powerfully by urine. Its official preparations are an extract made with water and spirit

spirit, a simple tincture [*L. E.*], and and a compound powder [*E.*]

Frederick Hoffman particularly cautions against giving this medicine to children; and assures us, that it will destroy appetite, weaken the body, and perhaps occasion even death. In this point, this celebrated practitioner was probably deceived: children, whose vessels are lax, and the food soft and lubricating, bear these kinds of medicines, as Geoffroy observes, better than adults; 'and accordingly inoculators make much use of the tincture mixed with simple syrup. The compound powder is employed in dropsy, as a hydragogue purge; and where stimulus is not contraindicated, jalap is considered as a safe cathartic.'

JAPONICA TERRA, *sive catechu* [*L. E.*] Japan earth, improperly so called; being neither an earth, nor the produce of Japan; but an inspissated vegetable juice, prepared in the East-Indies from the *mimosa catechu* *Lin.* It is dry and pulverable, outwardly of a reddish colour, inwardly of a shining dark brown, almost black, with some cast of red. When pure, it dissolves totally in water, and almost totally in rectified spirit: as we usually meet with it, a considerable quantity of sandy matter is left by both these menstrua. This medicine is a mild astringent, and frequently employed as such in alvine fluxes, uterine profluvia, in laxity and debility of the viscera in general, and in coughs proceeding from thin acrid defluxions. Its taste is more agreeable than that of most other substances of this class; chewed for some time, it leaves a kind of sweetness in the mouth. The troches and tincture, kept in the shops, are very elegant preparations of it. It gives name to an offici-

nal confection and tincture [*E.*], and is an ingredient in the compound powder of amber, mithridate, and theriaca [*L.*]

JASMINI flores: *Jasmini vulgarioris flore albo C. B.* *Jasmini officinalis Lin.* Jasmine; the flowers.

This is a small tree, commonly planted in our gardens. The flowers have a strong smell, which is liked by most people, though to some disagreeable: expressed oils extract their fragrance by infusion; and water elevates somewhat of it in distillation, but no essential oil has hitherto been obtained from them: the distilled water, kept for a little time, loses its odour. As to their medical virtues, the present practice expects not any from them, notwithstanding they have been recommended for promoting delivery, curing ulcerations of the uterus, &c.

IBERIDIS folia: *Lepidii gramineo folio sive iberidis Tourn.* *Ligustici levistici Lin.* Sciatica cretenses; the herb.

This is met with in botanic gardens: in taste, smell, and medical virtues, it agrees with the nasturtium. It has been particularly recommended in external applications against the sciatica, whence the English name of the plant.

ICHTHYOCOLLA. Fish-glue, or isinglass.

This is a solid glutinous substance, obtained from a large kind of fish caught in the seas of Muscovy. The skin and some other parts of the animal are boiled in water, the decoction inspissated to a proper consistence, and then poured out so as to form thin cakes; these are either farther exsiccated till perfectly dry, or cut while soft into slices, which are afterwards bent, or rolled up into spiral, horseshoe, and other shapes.

shapes. 'Some allege it consists of certain membranous parts of fishes, as the air-bladder, intestines, &c. only cleansed, dried, and rolled up or twisted.' This glue is more employed for mechanic purposes than in medicine. It may be given in a thin acrimonious state of the juices, after the same manner as the vegetable gums and mucilages; regard being had to their different disposition to putrescence.

IMPERATORIÆ, *feu Magi-*
strantie radix: Imperatorie majoris
C. B. Imperatorie ostruthii Lin.
Masterwort; the root [E.]

This is a native of the Alps and Pyrenean mountains, and some parts of Germany, from whence we are supplied with roots superior in aromatic flavour to those raised in our gardens. The smell of this root is very fragrant; its taste bitterish, warm and pungent, glowing in the mouth for a long time after it has been chewed. This simple, though undoubtedly an elegant aromatic, is not regarded in the present practice: Its flavour is similar to that of angelica, but stronger.

IPECACOANHÆ radix: Pfy-
otriæ emetica Lin. [L. E.] A root
brought from the Spanish West-
Indies.

It is divided into two sorts, Peruvian and Brazilian: but the eye distinguishes three, ash-coloured or grey, brown, and white. The ash-coloured, or Peruvian ipecacoanha of the shops, is a small wrinkled root, bent and contorted into a great variety of figures, brought over in short pieces, full of wrinkles, and deep circular fissures, quite down to a small white woody fibre that runs in the middle of each piece: the cortical part is compact, brittle, looks smooth and resinous upon breaking: it has very little smell; the taste is bitterish and sub-

acid, covering the tongue as it were with a kind of mucilage. The brown is small, and somewhat more wrinkled than the foregoing, of a brown or blackish colour without, and white within; this is brought from Brazil. The white sort is woody, has no wrinkles, and no perceptible bitterness in taste. The first sort (the ash-coloured or grey ipecacoanha) is that usually preferred for medicinal use. The brown has been sometimes observed, even in a small dose, to produce violent effects. The white, though taken in a large one, has scarce any effect at all: Mr Geoffroy calls this sort bastard ipecacoanha, and complains that it is an imposition upon the public. Geoffroy, Neumann, Dale, and Sir Hans Sloane, inform us, that the roots of a kind of apocynum (dogs-bane) are too frequently brought over instead of it; and instances are given of ill consequences following from the use of these roots: if the marks above laid down, particularly the ash colour, brittleness, deep wrinkles, and bitterish taste, be carefully attended to, all mistakes of this kind may be prevented.

Ipecacoanha was first brought into Europe about the middle of last century, and an account of it published about the same time by Piso; but it did not come into general use till about the year 1686, when Helvetius, under the patronage of Lewis XIV. introduced it into practice. This root is one of the mildest and safest emetics we are acquainted with; and has this peculiar advantage, that if it should not operate by vomit, it passes off by the other emunctories. It was first introduced among us with the character of an almost infallible remedy in dysenteries, and other inveterate fluxes, as menorrhagia and leucorrhœa; as also in disorders proceeding from ir-

obstructions of long standing: nor has it lost much of its reputation by time. In dysenteries, it almost always produces happy effects, and often performs a cure in a very short space of time. In other fluxes of the belly, in beginning dysenteries, and such as are of a malignant kind, or where the patient breathes a tainted air, it has not been found equally successful: in these cases it is necessary to continue the use of this medicine for several days, and to join with it opiates, diaphoretics, and the like. This root, given in substance, is as effectual, if not more so than any of the preparations of it: the pure resin acts as a strong irritating emetic, but is of little service in dysenteries; whilst an extract prepared with water is almost of equal service in these cases with the root itself, though it has little effect as an emetic. Geoffroy concludes from hence, that the chief virtue of ipecacoanha in dysenteries depends upon its gummy substance, which lining the intestines with a soft mucilage, when their own mucus has been abraded, occasions their exulcerations to heal, and defends them from the acrimony of the juices: and that the resinous part, in which the emetic quality resides, is required, where the morbid matter is lodged in the glands of the stomach and intestines. But if the virtues of this root were entirely owing to its mucilaginous, or gummy part, pure gums, or mucilages, might be employed to equal advantage. Water, assisted by a boiling heat, takes up from all vegetables a considerable portion of resinous along with the gummy matter: if the ipecacoanha remaining after the action of water be digested with pure spirit, it will not yield half so much resin as at first: so that the aqueous extract differs from the crude root only in degree,

being proportionably less resinous, and having less effect, both as an emetic, and in the cure of dysenteries. The virtues of ipecacoanha, in this disorder, depend upon its promoting perspiration, the freedom of which is here of the utmost importance, and an increase of which, even in healthful persons, is generally observed to suppress the evacuation by stool. In dysenteries, the skin is for the most part dry and tense, and perspiration obstructed: the common diaphoretics pass off without effect through the intestinal canal: but ipecacoanha, if the patient after a puke or two be covered up warm, brings on a plentiful sweat. After the removal of the dysentery, it is necessary to continue the use of the medicine for some time longer, in order to prevent a relapse; for this purpose, a few grains divided into several doses, so as not to occasion any sensible evacuation, may be exhibited every day; by this means the cure is effectually established. And indeed small doses given, even from the beginning, have been often found to have better effects in the cure of this disease than larger ones. Geoffroy indeed informs us, from his own experience, that he has observed ten grains of the powder to act as effectually as a scruple or two; and therefore confines the dose betwixt six and ten grains: it has lately been found, that even smaller doses prove sufficiently emetic. The only officinal preparation of this root is a tincture made in wine, [L. E.]

‘The active gummy resin is almost entirely in the bark of the root. It is found to lose considerably by keeping; and boiling deprives it of its emetic power altogether. The full dose of the powder is a scruple or half a dram, and double that in form of watery infusion

tion. The full dose is recommended in the paroxysm of spasmodic asthma, and a dose of three or four grains every morning in habitual asthmatic indisposition. A dose of $\frac{1}{2}$ or $\frac{1}{4}$ grain rubbed with sugar and given every four hours or oftener is recommended in uterine hemorrhagy, cough, pleurisy, hæmoptoe, &c. Ipecuanha is also found to be antiseptic.

IRIDIS FLORENTINÆ

Lin. radix: *Iridis Florentinae albae* C.B. Florentine orris; the root [E.]

IRIDIS PURPUREÆ NOS-
TRATIS radix: *Iridis vulgaris Germanicae sive sylvestris* C. B. *Iridis Germanicae* Lin. Flower-de-luce; the root.

Both these appear to be the same species of plant: several varieties of it are cultivated in our gardens on account of the elegance of their flowers. The roots, when recent, have a bitter, acrid, nauseous taste, and taken into the body prove strongly cathartic; and hence the juice is recommended in dropsies, in the dose of three or four scruples. By drying they lose this quality, yet still retain a somewhat pungent, bitterish taste: their smell in this state is of the aromatic kind; those produced in the warmer climates have a very grateful flavour, approaching to that of March violets: hence the use of the Florentine iris in perfumes, and for flavouring liquors: the shops employ it in the white pectoral troches [L.], and as an ingredient in the theriaca [L.]

IRIS PALUSTRIS, vide
GLADIOLA.

IVA ARTHRITICA, vide
CHAMÆPITYS.

JUGLANDIS cortex et fructus:
The walnut, and its outer shell.

The kernel of the fruit is similar in quality to almonds: the shell is astringent: but neither of them is at present employed in medicine.

JUJUBÆ. *Rhamni zizyphi* Lin.
fructus. Jujubes; a half-dried fruit brought from France.

Jujubes have a pleasant sweet taste. They are recommended in an acrimonious state of the juices; in coughs from thin sharp defluxions; and in heat of urine: but they are at present, among us, a stranger to medicinal practice, and to the shops.

JUNCUS ODORATUS:
Juncus odoratus sive aromaticus C.B. *Andropogon schœnanthus* Lin. Sweet rush, or camels hay [L.]

This is a dry smooth stalk, brought to us along with the leaves, and sometimes the flowers, from Turkey and Arabia, tied up in bundles about a foot long. The stalk, in shape and colour, somewhat resembles a barley straw: it is full of a fungous pith, like those of our common rushes: the leaves are like those of wheat, and surround the stalk with several coats, as in the reed: the flowers are of a carnation colour, striped with a lighter purple. The whole plant, when in perfection, has a hot, bitterish, not unpleasant, aromatic taste, and a very fragrant smell; by long keeping, it loses greatly of its aromatic flavour. Distilled with water, it yields a considerable quantity of essential oil. It was formerly often used as an aromatic, and in obstructions of the viscera, &c. but at present is scarce otherwise employed than as an ingredient in mithridate and theriaca.

JUNIPERI bacca. *Juniperi vulgaris fruticosa* C. B. *Juniperi communis*, Lin. Juniper; the berries [L. E.]

L

This

This is an evergreen shrub growing upon heaths and hilly grounds in all the parts of Europe: the wood and resin are not at present made use of for medicinal purposes: the berries are brought from Holland, where this shrub is very plentiful.

Juniper berries have a strong, not disagreeable smell; and a warm, pungent, sweet taste, which if they are long chewed or previously well bruised, is followed by a bitterish one. The pungency seems to reside in the bark; the sweet in the juice; the aromatic flavour in oily vesicles, spread through the substance of the pulp, and distinguishable even by the eye; and the bitter in the seeds: the fresh berries yield, on expression, a rich, sweet, honey-like, aromatic juice; if previously pounded so as to break the seeds, the juice proves tart and bitter.

These berries are useful carminatives and stomachics, and are diuretic: for these purposes, a spirituous water [L.] a compound spirituous water [E.] and essential oil distilled from them [L. E.] are kept in the shops: they are ingredients also in the mithridate and theriaca [L.], the liquor remaining after the distillation of the oil, passed through a strainer, and gently exhaled to the consistence of a rob, proves likewise a medicine of great utility, and in many cases is perhaps preferable to the oil, or berry itself: Hoffman is expressly of this opinion, and strongly recommends it in debility of the stomach and intestines, and says it is particularly of service to old people who are subject to these disorders, or labour under a difficulty with regard to the urinary excretion. This rob is of a dark brownish yellow colour, a balsamic sweet taste, with a little of the bitter, more or less, according as the

seeds in the berry have been more or less bruised.

KALI: *Kali majus cochleato semine C. B. Salsola soda Lin.* Glasswort.

This is an annual, and grows wild on the southern sea-coasts of Europe. The saline juice has been used in dropsy; but the plant is chiefly taken notice of as yielding copiously, when burnt, the mineral alkali which all marine plants do in some degree. An impure kind of this alkali is prepared from the kali cultivated in the salt marshes about Montpellier, and a purer kind at Alicante from the *salsola sativa Lin.* The impure kinds are called *soda* or *barilla*. The purified salt has been used in scrophula.

KERMES [L.] A round grain about the bulk of a pea, found (in Spain, Italy, and in the southern parts of France) adhering to the branches of the *ilex aculeata cocciglandifera C. B. Quercus coccifera Lin.*

These grains appear, when fresh, full of small, reddish ovula, or animalcules, of which they are the nidus. On expression, they yield a red juice, of a bitterish, somewhat rough and pungent taste, and a not unpleasant smell: this is brought to us from the south of France. The grains themselves are cured by sprinkling with vinegar before exsiccation: this prevents the exclusion of the ova, and kills such of the animals as are already hatched; otherwise, they change into a winged insect, leaving the grain an empty husk.

Kermes, considered as a medicine, is a grateful, very mild restraining, and corroborant. In this light it was looked upon by the Greeks: the Arabians added a cordial virtue: European writers also have in general recommended it for exhilarating

rating the spirits, and against palpitations of the heart: but more particularly for promoting birth, and preventing abortion. I have known, says Geoffroy, many women, who had never reached the end of pregnancy, made joyful mothers by the use of pills composed of *kermes*, *germin. ovor. exsiccat.* and *confectio de hyacintho* (a composition containing some vegetable astringents and aromatics, together with gold and silver leaf, four precious stones, and other ingredients of less value:) three of these pills must be taken for the first dose, and this repeated three times, at the interval of twice three hours; after which three pills more are to be taken every morning on the three last days of the moon in every month till delivery. Notwithstanding this assertion, we conceive our readers will with us believe, that neither the *kermes*, or its auxiliaries, are to be much depended on. The *kermes* gives name to an officinal confection, which appears to be greatly superior to the above composition.

KINO GUMMI. Red astringent gum from Gambia, *Lond. Med. Obs.* vol. i. art. 28. [E.]

‘It has a great resemblance to catechu. It is indeed redder and more astringent, its watery solution more decomposable by acids, and its ink less permanent. Its colouring and astringent matter are more perfectly taken up by spirit than by water, though water readily enough extracts a considerable share of both. It is used as an astringent in diarrhoea, &c. In proof, spirit it forms an elegant tincture [E.]’

LABDANUM [L.] This is a resinous substance exuding upon the leaves of the *cistus ladanifera* *Cretica flore purpureo* Tourn. *Cistus Cretica* Lin.

This resin is said to have been

formerly collected from the beards of goats who brouzed the leaves of the *cistus*: at present, a kind of rake, with several straps or thongs of skins fixed to it, is drawn lightly over the shrub, so as to take up the unctuous juice, which is afterwards scraped off with knives. It is rarely met with pure, even in the places which produce it; the dust, blown upon the plant by the wind, mingling with the tenacious juice: the inhabitants are also said to mix with it a certain black sand. In the shops two sorts are met with: the best (which is very rare) is in dark-coloured almost black masses, of the consistence of a soft plaster, which grows still softer upon being handled; of a very agreeable smell, and of a light pungent bitterish taste: the other sort is harder, not so dark coloured, in long rolls coiled up: this is of a much weaker smell than the first, and has a large admixture of a fine sand, which in the labdanum, examined by the French academy, made up three-fourths of the mass. Rectified spirit of wine almost entirely dissolves pure labdanum, leaving only a small portion of gummy matter which has no taste or smell: and hence this resin may be thus excellently purified for internal purposes. It is an useful ingredient in the stomachic and cephalic plasters of the shops.

LAC: Milk:

‘Milk is a secretion peculiar to women, the females of quadrupeds, and of the cetaceous fishes. It may be considered as a kind of emulsion, consisting of butter, cheese, and whey; the whey containing a mucilaginous sugar, which keeps the butter and cheese in union with its water; and it is from this sugary part that milk is subject to the vinous fermentation, as in the Russian koumis, a vinous liquor made

of mares milk, and recommended in phthisis and cases of weakness.

New milk mixes uniformly with common water, the mineral chalybeate waters, wines, and malt liquors that are not acid, weak vinous spirits, solutions of sugar, soaps, and neutral salts; but not with oils expressed or distilled. Acids both mineral and vegetable coagulate it; as also do fixt and volatile alkalies, and highly rectified spirit of wine: the curd made by acids is in part resolved again by alkaline liquors; as that made by alkalies likewise is by acids. Neutral salts, nitre in particular, preserve it

from coagulating spontaneously; and likewise render it less easily coagulable by acids.

The human milk is the sweetest of these liquors, and that of asses next to it: this last is the most dilute of them all; on suffering it to coagulate spontaneously, the curd scarce amounted to two drams from twelve ounces, whilst that of cows milk was five times as much: the coagulum of asses milk, even when made by acids, forms only into fine light flakes, which swim in the serum; that of goats milk concretes into more compact masses, which sink.

Upon evaporating twelve ounces of	There remained of dry matter drams,	From which water extracted a sweet saline substance, amounting, when exsiccated, to drams,
Cows milk	13	$1\frac{1}{2}$
Goats milk	$12\frac{1}{2}$	$1\frac{1}{2}$
Human milk	8	6
Asses milk	8	6

The saline substance obtained from asses milk was white, and sweet as sugar; those of the others brown or yellow, and considerably less sweet; that of cows milk, the least sweet of all. It appears, therefore, that asses milk contains more serum, and much more of a saccharine saline matter, than those of cows and goats; and that the two latter abound most with unctuous gross matter: hence these are found to be most nutritious, whilst the first proves most effectual as an aperient and detergent.

The inspissated residuum of milk, digested with about as much water as was wasted in the evaporation, yields an elegant kind of whey, more agreeable in taste and which keeps better than that made in the common manner. This liquor pro-

motes the natural secretions in general; and, if its use is duly continued, does good service in scorbutic and other disorders proceeding from thick phlegm and obstructions of the viscera.

There are considerable differences in the milk of the same animal, according to its different aliment. Dioscorides relates, that the milk of goats, who feed on the scammony plant and sparges, proved cathartic: and examples are given in the *Acta Hassniensia* of bitter milk from the animal having eaten wormwood. It is a common observation, that cathartics and spirituous liquors given to a nurse, affect the child: and that the milk of animals feeding on green herbs, is much more dilute than when they are fed with dry ones. Hoffman, from whom most

of

of the foregoing observations are taken, carries this point so far, as to direct the animal to be dieted according to the disease which its milk is to be drank for.

LACCA, *gummi-resina*. Lac, improperly called gum lac.

This is a sort of wax of a red colour, collected in the East Indies by certain insects, and deposited on sticks fastened for that purpose in the earth. It is brought over, either adhering to the sticks, or in small transparent grains, or in semi-transparent flat cakes: the first is called stick lac, the second seed lac, and the third shell lac. On breaking a piece of stick lac, it appears composed of regular cells like the honeycomb, with small corpuscles of a deep red colour lodged in them: these are the young insects, and to these the lac owes its tincture; for when freed from them, its colour is very dilute. The shell and seed lacs, which do not exhibit any insects or cellular appearance upon breaking, are supposed to be artificial preparations of the other: the seed sort is said to be the stick lac bruised and robbed of its more soluble parts; and the shell to be the seed lac, melted and formed into cakes. The stick lac therefore is the genuine sort, and ought alone to be employed for medicinal purposes. This concrete is of great esteem in Germany, and other countries, for laxity and sponginess of the gums, proceeding from cold, or a scorbutic habit: for this use the lac is boiled in water, with the addition of a little alum, which promotes its solution: or a tincture is made from it with rectified spirit. This tincture is recommended also internally in the fluor albus, and in rheumatic and scorbutic disorders: it has a grateful smell, and a not unpleasant, bitterish, astringent taste:

The principal use of lac among us is in certain mechanic arts as a colouring drug, and for making sealing wax.

LACTUCÆ *folia, semen*: *Lactuca sativæ* C. B. et Lin. Garden lettuce; the leaves and seeds.

The several sorts of garden lettuces are very wholesome, emollient, cooling salad herbs, easy of digestion, and somewhat loosening the belly. Most writers suppose that they have a narcotic quality; and indeed, in many cases, they contribute to procure rest; this they effect by abating heat, and relaxing the fibres. The seeds are in the number of the four lesser cold seeds.

There are two wild sorts of lettuce, not unfrequently met with under hedges, &c. One of these differs greatly in quality from the foregoing; as may be judged from its strong soporific smell: it is called by Morison, *Lactuca sylvestris opii odore vehementi soporifero et viroso*; *Lactuca virosa* Lin. The upper leaves of this are jagged about the edges, the lower ones not. It smells strongly of opium, and resembles it in its effects; and its narcotic power, like that of the poppy heads, resides in its milky juice. An extract from the expressed juice is recommended in small doses in dropsy. In dropsies of long standing, proceeding from visceral obstructions, it has been given to the extent of half an ounce a day. It is said to agree with the stomach, to quench thirst, to be gently laxative, powerfully diuretic, and somewhat diaphoretic. Plentiful dilution is allowed during its operation. Collin of Vienna asserts, that out of 24 dropical patients, all but one were cured by this medicine. All the leaves of the other wild sort are very deeply jagged: hence this is by the same author distinguished by

the name *Lactuca silvestris laciniata*;
Lactuca scariola Lin.

LAMII ALBI *folia, flores*: *Lamii albi non satentis folio oblongo* C. B. et Lin. White archangel, or dead nettle; the flowers [L.]

This grows wild in hedges; and flowers in April and May. The flowers have been particularly celebrated in uterine fluors and other female weaknesses, as also in disorders of the lungs; but they appear to be of very weak virtue.

LAPATHUM, Dock; the roots.

We have ten or eleven docks growing wild in England, the roots of most of which are brought to market promiscuously; though two have been generally directed by physicians in preference to the others: these are,

OXYLAPATHUM: *Lapathum folio acuto plano* C. B. *Rumex acutus* Lin. The dock with long, narrow, sharp-pointed leaves, not curled up about the edges.

HYDROLAPATHI *five Herba Britannica radix*: *Lapathi aquatici folio cubitali* C. B. *Rumicis aquatici* Lin. The great water-dock; the root [E.]

The leaves of the docks gently loosen the belly, and have sometimes been made ingredients in decoctions for removing a costive habit. The roots form an ink with iron, and are celebrated for the cure of scorbutic and cutaneous disorders, both exhibited internally, and applied externally in ointments, cataplasms, lotions, and fomentations. Muntingius published a treatise on these plants in the year 1681, in which he endeavours to prove, that our great water-dock is the *herba Britannica* of the ancients; and indeed

the description which Dioscorides gives of the latter, does not ill agree to the former. This author therefore attributes to the *hydrolapathum* all the virtues ascribed of old to the *Britannica*, particularly recommending it in the scurvy and all its symptoms. Where this disorder is of very long standing, so as not to yield to the *hydrolapathum* alone, he directs a composition, by the use of which, he says, even the venereal lues will in a short time be effectually cured. Six ounces of the roots of the water-dock, with two of saf-ron; and of mace, cinnamon, gentian root, liquorice root, and black pepper, each three ounces (or, where the pepper is improper, six ounces of liquorice), are to be reduced into coarse powder, and put into a mixture of two gallons of wine, with half a gallon of strong vinegar, and the yolks of three eggs; and the whole digested, with a moderate warmth, for three days, in a glazed vessel, close stopped: from three to six ounces of this liquor are to be taken every morning on an empty stomach, for fourteen or twenty days, or longer.

LAPATHUM UNCTUOSUM, vide **BONUS HENRICUS**.

LAPIS BEZOAR, CALAMINARIS, HÆMATITES, LAZULI; vide **BEZOAR, CALAMINARIS, &c.**

LAPPA MAJOR, vide **BARBARA MAJOR**.

LAVENDULÆ *folores*: *Lavendula angustifolia* C. B. *Lavendula spica* Lin. Common, or narrow-leaved lavender, or spike; the flowers [L. E.]

LAVENDULÆ *folores*: *Lavendula latifolia* C. B. var β Lin. Greater

Greater or broad-leaved lavender; the flowers.

These plants have a fragrant smell, to most people agreeable; and a warm, pungent, bitterish taste: the broad-leaved sort is the strongest in both respects, and yields in distillation thrice as much essential oil as the other; its oil is also hotter, and specifically heavier: hence in the southern parts of France, where both kinds grow wild, this only is made use of for the distillation of what is called oil of spike. The narrow-leaved is the sort commonly met with in our gardens, and therefore alone directed by the colleges.

Lavender is a warm stimulating aromatic. It is principally recommended in vertigoes, palsies, tremors, suppression of the menstrual evacuations; and in general in all disorders of the head, nerves, and uterus, proceeding from a weakness of the solids, and lentor or sluggishness of the juices. It is sometimes also used externally in fomentations for paralytic limbs. The distilled oil is particularly celebrated for destroying the *pediculi inguinales*, and other cutaneous insects: if soft spongy paper, dipt in this oil, either alone, or mixed with that of almonds, be applied at night to the parts infested by the insects, they will certainly, says Geoffroy, be all found dead in the morning. The officinal preparations of lavender, are the essential oil, a simple and compound spirit [*L. E.*], and a conserve [*L.*] The flowers in substance are an ingredient in the sterutatory powder [*L.*]

LAUREOLÆ *folia, bacca:* *Laureola sempervirentis flore viridi, quibusdam laureola maris, C. B. Daphnes laureola.* Spurge laurel; the leaves and berries.

This is a small shrub, growing wild in some of our woods. The

leaves, berries and bark, both of the stalks and roots, have an extremely acrid, hot taste, which last for a long time, burning and inflaming the mouth and fauces. Taken internally, they operate with great violence by stool, and sometimes by vomit; so as scarce to be exhibited with any tolerable degree of safety, unless their virulence be previously abated by boiling.

LAURI *folia, bacca, et baccarum oleum expressum: Lauri vulgaris C. B. Lauri nobilis Lin.* The bay tree; its leaves and berries [*L. E.*], and expressed oil of the berries [*E.*]

These are generally brought from the Streights, though the tree bears the colds of our own climate. They have a moderately strong aromatic smell, and a warm, bitterish, pungent taste: the berries are stronger in both respect than the leaves, and afford in distillation a larger quantity of aromatic essential oil; they yield also an almost insipid oil to the press, in consequence of which they prove unctuous in the mouth. These simples are warm carminative medicines, and sometimes exhibited in this intention against flatulent colics, and likewise in hysterical disorders.

Their principal use in the present practice is in glysters, and some external applications. The leaves enter our common fomentation; and the berries, the plaster and cataplasm of cummin: they also give name to an electary, which is little otherwise used than in glysters.

LAZULI LAPIS: A compact ponderous fossil, of an opaque blue colour, met with in the eastern countries, and in some parts of Germany. It is a strong emetic, rarely or never used in the present practice. It is found to consist of calcareous

earth, gypsum, iron, sparry acid, and flint. It is distinguished from other blue stones by obstinately retaining its colour in a strong heat.

LENTIS VULGARIS *semen*: *Lentis vulgaris semine subrufo C. B.* Lentile; the seed.

This is a strong, flatulent food, very hard of digestion: it is never, at least with us, used for any medicinal purpose.

LENTISCUS: *Lentiscus verus ex insula Chio, cortice et foliis fuscis Commelin.* *Lentiscus vulgaris C. B.* *Pistachia lentiscus Lin.* The lentisc, or mastich tree; the wood.

This tree or shrub is a native of the warm climates, but bears the common winters of our own. The wood is brought to us in thick knotty pieces, covered with an ash-coloured bark, and white within, of a rough, somewhat pungent taste, and an agreeable, though faint smell; the smaller tough sprigs are both in taste and smell the strongest. This wood is accounted a mild balsamic restringent; a decoction of it is in the German ephemerides dignified with the title of vegetable *aurum potabile*, and strongly recommended in catarrhs, nausea, and weakness of the stomach; for strengthening the tone of the viscera in general, and promoting the urinary secretion.

This is the tree which in the island Chio affords the resin called mastich. See the article **MASTICHE**.

LEPIDII folia: *Lepidii latifolii C. B. et Lin.* Common broad tander, pepperwort, or poor man's pepper; the leaves.

This plant is sometimes found wild by the sides of rivers, and in other moist places. The leaves have an aromatic, pungent, biting taste,

somewhat approaching to that of pepper, but going off sooner than that of most other substances of this class. They are very rarely employed in medicine, though strongly recommended as antiscorbutics, and for promoting the urinary and cuticular secretions; virtues, which they have undoubtedly a good title to.

The *lepidium iberis Lin.* has much the same properties. Externally, it has been supposed useful in sciatica, hence called *sciatica creffles*.

LEUCOIUM LUTEUM, vide **CHEIRI**.

LEVISTICI seu Ligustici semen: *Angelica montana perennis, paludapii folio, Tourn.* *Ligustici vulgaris C. B.* *Ligustici levistici Lin.* Lovage; the seed [E.]

This is a large unbelliferous plant, cultivated with us in gardens. The root nearly agrees in quality with that of angelica: the principal difference is, that the lovage root has a stronger smell, and a somewhat less pungent taste, accompanied with a more durable sweetness: the seeds are rather warmer than the root. These simples, though certainly capable of being applied to useful purposes, are not at present regarded: neither of them is directed in extemporaneous prescription, and the root enters no officinal composition.

LICHEN: *Lichen petræus cauliculo pileolum sustinente C. B.* *Marchantia polymorpha Lin.* Liverwort; the herb.

This grows wild in moist shady places, and by the sides of rivers. It has a faint not disagreeable smell; and an herbaceous, roughish, and somewhat bitterish taste. Great virtues have been attributed to this simple in obstructions of the liver, jaun-

jaundice, &c. which practitioners do not now expect from it.

LICHEN CINEREUS TERRESTRIS: *Lichen terrestris cinereus Raii.* *Lichen caninus Lin.* Ash-coloured ground liverwort [*L.*]

This consists of pretty thick digitated leaves, flat above, of a reticular texture underneath, and fastened to the earth by small fibres: the leaves when in perfection are of an ash colour; by age they become darker-coloured or reddish. It is met with on commons and open heaths, where it quickly spreads on the ground. Dr Mead informs us, that this plant grows in all countries, and has been brought over from America along with the Peruvian bark: that it is found at all times, but ought to be gathered from autumn to winter, as being then in its freshest vigour.

This simple is said to be a warm diuretic; but the taste discovers in it little or no warmth. It is chiefly celebrated for its virtue in the cure of the disorders occasioned by the bite of a mad dog. An account of the remarkable effects in these cases of a powder composed of the dried leaves and pepper, was communicated to the Royal Society by Mr Dampier, and published in the Philosophical Transactions, n° 237. This powder was afterwards inserted (in the year 1721) into the London pharmacopœia, under the title of *pulvis antilyssus*, at the desire of an eminent physician, who had great experience of its good effects. Some years after, the same gentleman published and dispersed a paper containing the method of cure, which he had in a great number of instances constantly found successful. In this paper the directions were to the following effect: "Let the patient be blooded nine or ten ounces; and afterwards take a dram and a

" half of the powder every morning fasting, for four mornings successively, in half a pint of cows milk, warm. After these four doses are taken, the patient must go into the cold bath, or a cold spring or river, every morning fasting for a month; he must be dipt all over, but not stay in (with his head above water) longer than half a minute, if the water be very cold: after this he must go in three times a-week for a fortnight longer." In the year 1745, the world was favoured with a new edition of the Mechanical Account of Poisons, in which we find the same method of cure again recommended, as having, in a course of thirty years experience, never failed of success; where it had been followed before the hydrophobia begun. It is greatly to be wished, that the efficacy of this medicine in preventing these terrible disorders, was absolutely certain, and proved by incontestible facts. Instances have been produced of its proving unsuccessful; and the many examples of the fatality of the disease which continually occur, seem arguments either of the inefficacy of the medicine, or a strange negligence in applying it. We shall only farther observe, that Boerhaave, who is in general sufficiently liberal in the commendation of remedies, ranks this among those insignificant trifles, which whoever depends upon will find himself deceived.

'LICHEN ISLANDICUS *Lin.* Eryngo-leaved or eatable Iceland liverwort [*L.*]

" Its leaves are nearly erect, stiff when dry, and pliant when moist; irregularly divided into broad distant segments, smooth and ciliated at the margins. It is a native of this country. An ounce of it boiled in a pound of water, and strained, yields

yields about seven ounces of as thick a mucilage as one part of gum Arabic dissolved in three parts of water. The Icelanders use it in diet. It is steeped in water to deprive it of its bitterness and cathartic quality, and the powder of it is made into potage with milk or water. This diet is recommended in phthisis and scorbutus; and is said to be very nourishing, antiseptic, and gently laxative.

LIGNUM ALOES, vide A-GALLOCHUM.

LIGNUM RHODIUM [L.]
Rosewood. a wood or root brought from the Canary islands; and aspalathus, a simple of considerable esteem among the ancients, but which has not come to the knowledge of latter times.

The writers on botany and the materia medica. are much divided about the lignum rhodium. not only with regard to the plant which affords it, but likewise in their accounts of the drug itself, and have described, under this name, simples manifestly different. This confusion seems to have arisen from an opinion that the rhodium and aspalathus are the same; whence different woods brought into Europe for the unknown aspalathus were sold again by the name of rhodium.

As to aspalathus, the ancients themselves disagree; Dioscorides requiring by this appellation the wood of a certain shrub freed from the bark, and Galen the bark of a root. At present we have nothing under this name in the shops. What was heretofore sold among us as aspalathus, were pieces of a pale coloured wood brought from the East Indies, and more commonly called calambour.

‘The aspalathus, calambour, and lignum aquilæ, are supposed to be

woods of the nature of agallochum, but weaker in quality.’

The lignum rhodium of the shops is usually in long crooked pieces, full of knots, which when cut appear of a yellow colour like box, with a reddish cast: the largest, smoothest, most compact, and deepest coloured pieces, should be chosen; and the small, thin, or pale ones rejected. The taste of this wood is lightly bitterish, and somewhat pungent; its smell very fragrant, resembling that of roses: long kept, it seems to lose its smell; but on cutting, or rubbing one piece against the other, it smells as well as at first. Distilled with water, it yields an odoriferous essential oil, in very small quantity. Rhodium is at present in esteem only upon account of its oil, which is employed as an high and agreeable perfume in scenting pomatums and the like. But if we may reason from analogy, this odoriferous simple might be advantageously applied to nobler purposes; a tincture of it in rectified spirit of wine, which contains in small volume the virtue of a considerable deal of the wood, bids fair to prove a serviceable cordial, not inferior perhaps to any thing of this kind.

LIGNUM TINCTILE CAMPECHENSE [L.E.] *Lignum Brasilio simile, ceruleo tingens, J. B. Hæmatoxylum Campechianum Lin.* Campeachy or logwood; a wood brought from Campeachy in the bay of Honduras.

This is usually in large logs, very compact and hard, of a red colour, and an astringent sweet taste. It has been for a long time used by the dyers, but not till very lately as a medicine; a decoction of it, and the extract, are in use in our hospitals, and said to have proved very serviceable in diarrhœa. ‘It frequently

quently tinges the stools, and sometimes the urine.' The extract is now received into the shops.

LILII ALBI radix: *Lilii albi flore erecto et vulgaris* C. B. *Lilii candidi*, Lin. White lily; the root [E.]

This is cultivated in gardens, more for the beauty of its flowers, than medicinal use. 'The mucilaginous root is used by some in form of poultice.'

LILII CONVALLIUM radix, flores: *Lilii convallium albi* C. B. *Convallaria muralis* Lin. Lily of the valey, or May lily; the roots and flowers. This grows wild in woods and shady places, flowering in May.

The flowers of these plants are said to be cephalic and nervine. They have a pleasant sweet smell, which they impart by infusion to expressed oils, and give over in distillation both to water and spirit; but no essential oil has been hitherto obtained from them. Etmuller says, that the distilled spirit is more fragrant than the water. The roots of the garden-lily abound with a soft mucilage, and hence they have been used externally in emollient and maturating cataplasms. Those of the wild lily are very bitter: dried, they are said to prove a gentle errhine; as also are the flowers.

LIMONIORUM MALORUM, seu

LIMONUM succus, cortex: *Fructus mali limoniae acidæ* C. B. *Citrus medica* Lin. Lemon; their juice, yellow rind, and its essential oil called essence of lemons, [L.E.]

The juice of lemons is similar in quality to that of oranges, from which it differs little otherwise than in being more acid. The yellow peel is an elegant aromatic, and is

frequently employed in stomachic tinctures and infusions: it is considerably less hot than orange peel, and yields in distillation with water a less quantity of essential oil: its flavour is nevertheless more perishable, yet does not arise so readily with spirit of wine; for a spirituous extract made from lemon peel possesses the aromatic taste and smell of the subject in much greater perfection than an extract prepared in the same manner from the peels of oranges. In the shops, a syrup is prepared from the juice, and the peel is candied; the peel is an ingredient in the bitter infusions, bitter wine, and both the peel and juice in one of the infusions of sena; the essential oil in the volatile aromatic spirit, saponaceous pills, and ointment of sulphur [L.]

LINARIÆ folia: *Linaria vulgaris luteæ flore majore* C. B. *Antirrhini linaria* Lin. Toad-flax; the leaves.

This grows wild upon banks and about the sides of fields. It is said by some to be a powerful diuretic, whence it is named by *Tragus herba urinalis*; by others, to be a strong cathartic, inasmuch that Brunfelsius has called it by a German name expressing this quality, *scheißkraut*. Experience scarcely warrants either of these appellations; nor does common practice take any notice of the plant.

LINGUÆ CERVINÆ, seu Scolopendrii, folia: *Lingua cervinae officinarum* C. B. *Asplenii scolopendrii* Lin. Harts-tongue: the leaves.

This plant consists of a number of long narrow leaves, without any stalk: it grows upon rocks and old walls, and remains green all the year. The leaves have a roughish, somewhat mucilaginous taste, like that of the maiden-hairs, but more disa-

disagreeable. They are recommended in obstructions of the viscera, and for strengthening their tone; and have sometimes been made use of for these intentions, either alone, or in conjunction with maiden-hair, or the other plants called capillary.

LINI CATHARTICI, *Lin.*

Folia: Lini pratensis floribus exiguis C. B. Purging flax, or mill-mountain; the leaves.

This is a very small plant, not above four or five inches high, found wild upon chalky hills and in dry pasture-grounds. Its virtue is expressed in its title; an infusion in water or whey of a handful of the fresh leaves, or a dram of them in substance when dried, are said to purge without inconvenience.

LINI VULGARIS *femen: Oleum e seminibus expressum Lini sativi*

C. B. Lini usitatissimi Lin. Common flax; the seed, called linseed [*L. E.*] and the expressed oil of the seeds [*E.*]

Linseed yields to the press a considerable quantity of oil; and boiled in water, a strong mucilage: these are occasionally made use of for the same purposes as other substances of that class; and sometimes the seeds themselves in emollient and maturing cataplasms. They have also been employed in Asia, and, in times of scarcity, in Europe, as food; but are not agreeable, or in general wholesome. Tragus relates, that those who fed on these in Zealand, had the hypochondres much distended, and the face and other parts swelled, in a very short time; and that not a few died of these complaints. The expressed oil is an officinal preparation.

LIQUIDAMBRA. Liquidambar; a resinous juice which flows

from a large tree (*Liquidambar styraciflua Lin.*) growing in Virginia, Mexico, and other provinces of America. This juice is at first about the consistence of turpentine, but by long keeping hardens into a resin: it is of a yellow colour inclining to red, a warm taste, and a fragrant smell, not unlike that of storax heightened with a little ambergris. It was formerly of great use as a perfume, but is at present a stranger to the shops.

LITHARGYRUS [*L. E.*]

Litharge; a preparation of lead, usually in form of soft flakes, of a yellowish reddish colour. If calcined lead be urged with a hasty fire, it melts into the appearance of oil, and on cooling concretes into litharge. Greatest part of the litharge met with in the shops, is produced in the purification of silver from lead, and the refining of gold and silver by means of this metal: according to the degree of fire and other circumstances, it proves of a pale or deep colour; the first has been commonly called litharge of silver, the other litharge of gold. See the article PLUMBUM.

LITHOSPERMI, seu Mili folis, semen: Lithospermi majoris erecti C. B. Lithospermi officinalis Lin. Gromwell; the seed.

This is found wild in dry fields and hedges. Its seeds are roundish, hard, of a whitish colour, like little pearls; and from these circumstances have been supposed peculiarly serviceable in calculous disorders. Their taste is merely farinaceous.

LOBELIÆ RADIX. *Lobelia siphilitica Lin. [E.]* Blue cardinal-flower; the root.

This plant grows in moist places in Virginia, and bears our winters. It is perennial, has an erect stalk three

three or four feet high, blue flowers, a milky juice, and a rank smell. The root consists of white fibres about two inches long, resembles tobacco in taste, which remains on the tongue, and is apt to excite vomiting. It is used by the North American Indians as a specific in the venereal disease. The form is that of decoction, the dose of which is ordered to be gradually increased till it bring on very considerable purging, then to be intermitted for a little, and again used in a more moderate degree, till the cure is completed. The ulcers are also washed with the decoction, and the Indians are said to sprinkle them with the powder of the inner bark of the spruce tree. The same strictness of regimen is ordered as during a salivation.

LOTI URBANÆ folia, semen: *Loti hortensis odora* C. B. *Trifolii meliloti cerulea* Lin. Sweet trefoil; the leaves and seeds.

The flowers of this plant are stronger in smell than the other parts: these have been recommended for diaphoretic, alexipharmac, anodyne, and other virtues; but their effects have not been found considerable enough to continue them in practice.

LUJULÆ folia: *Oxyas alba* Gerard. *Oxalis acetosella* Lin. Wood-sorrel; the leaves [L.]

This is a small plant, growing wild in woods. In taste and medical qualities, it is similar to the common sorrel (see the article ACETOSA), but considerably more grateful, and hence is preferred by the London college. Boiled with milk, it forms an agreeable whey; and beaten with sugar, a very elegant conserve, which has been for some time kept in the shops, and is now received in the dispensatory.

LUMBRICI et LIMACES TERRESTRES. Earth-worms and snails.

Both these are supposed to cool and cleanse the viscera. The latter, from their abounding with a viscid glutinous juice, are recommended as a restorative in consumptions: for this purpose, they are directed to be boiled in milk; and thus managed, they may possibly be of some service. They give over nothing in distillation either with water or spirit; and hence the distilled waters of them, though formerly in great esteem, are not found to have any of the virtues which the animals themselves are supposed to possess.

LUPINI semen: *Lupini vulgaris, semine et flore albo, sativi* J. B. *Lupini albi* Lin. White lupines; the seeds.

These have a leguminous taste, accompanied with a disagreeable bitter one. They are said to be anthelmintic, both internally taken, and applied externally. Caspar Hoffman cautions against their internal use, and tells us (from one of the Arabian writers) that they have sometimes occasioned death. Simon Paulli also says, that he saw a boy of eight or ten years of age, after taking a dram of these seeds in powder, seized with exquisite pains of the abdomen, a difficulty of respiration, and almost total loss of voice; and that he was relieved from these complaints by a glyster of milk and sugar, which brought away a vast quantity of worms. But Mr Geoffroy observes, very justly, that either these symptoms were owing to the worms, and not to the medicine; or that these seeds, if they have any noxious quality, lose it, with their bitterness, in boiling; since they were commonly used among the Greeks as food, and recommended.

commended by Galen as very wholesome.

LUPULUS: *Convolvulus perennis, heteroclitus, floribus herbaceis, capsulis foliaceis strobili instar, Morif. Humulus lupulus Lin.* Hops; the loose leafy heads which grow on the tops of the stalks.

These are one of the most agreeable of the strong bitters, though rarely employed for any medicinal purposes. Their principal consumption is in malt liquors, which they render less glutinous, and dispose to pass off more freely by urine.

'The odour of hops hung in a bed has been found to induce sleep after opium had failed.'

LYCOPERDON: *Fungus rotundus orbicularis C. B. Lycoperdon bovista Lin.* Puff ball, or dusty mushroom.

This fungus is found in dry pasture grounds. It seems to be nearly of the same quality with the agaric of the oak; and has, like it, been employed for restraining external hæmorrhagies and other fluxions. The fine dust, with which it becomes filled by age, has been applied also in the same intentions.

MACIS. *Macis officinarum C. B.* Mace; one of the coverings of the nutmeg (see the article *Nux moschata*.) This spice, considered as the subject both of medicine and of pharmacy, agrees nearly with the nutmeg. The principal difference is, that mace is somewhat less astringent, yields to the press a more fluid oil, and in distillation a more volatile one: what is called in the shops expressed oil of mace, is prepared not from this spice, but from the nutmeg. Mace is an ingredient

in the officinal steel-wine [L.], and the expressed oil in the stomachic and cephalic plasters [L.]

MAGISTRANTIA, vide IMPERATORIA.

MAJORANÆ folia: *Majorana vulgaris C. B. Origan majorana Lin.* Sweet marjoram; the leaves [L. E.]

Marjoram is raised annually in our gardens for culinary as well as medicinal uses; the seeds are commonly procured from the southern parts of France, where the plant grows wild. It is a moderately warm aromatic, yielding its virtues both to aqueous and spirituous liquors by infusion, and to water in distillation. It is principally celebrated in disorders of the head and nerves, and in the humoural asthmas and catarrhs of old people. An essential oil of the herb is kept in the shops. The powder of the leaves proves an agreeable errhine, and enters the officinal sternutatory powder.

MALABATHRUM folium: *Folium cinnamomi five canellæ Malabarica et Javanensis C. B. Lauri cassia Lin.* Indian leaf [L.]. This leaf is of a green colour, firm texture, very smooth on one side, less so on the other, on which run three remarkable ribs through its whole length. Lemery and Pomet affirm, that these leaves have no perceptible smell or taste; Herman and others, that they have a very great share of both: those met with in our shops have little or no smell till they are well rubbed, when they emit an agreeable spicy odour: on chewing, they are found extremely mucilaginous. This drug is of no farther use in medicine, than as an ingredient in the mithridate and theriac;

riaca; and is, when in its greatest perfection, much inferior to the mace, which our college directs as a succedaneum to it.

MALVÆ folia, flores: *Malvæ sylvestris folio sinuato* C. B. *Malvæ sylvestris* Lin. Mallow; the leaves and flowers [L. E.]

These have a somewhat mucilaginous sweetish taste. The leaves are ranked the first of the four emollient herbs: they were formerly of some esteem, in food, for loosening the belly; at present, decoctions of them are sometimes employed in dysenteries, heat, and sharpness of urine, and in general for obtunding acrimonious humours: their principal use is in emollient glysters, cataplasms, and fomentations. The leaves enter the official decoction for glysters, and a conserve is prepared from the flowers [L.]

MALA: *Fructus mali sativæ Rar;* *Pyri mali* Lin. Apples.

All the sorts of apples have the common quality of cooling and abating thirst: the more acid kinds loosen the belly; the austere have rather a contrary effect.

MALA SYLVESTRIA: *Fructus mali sylvestris acido fructu Tourn.* Crab-apples or wildings.

These are so acid as not to be eatable: their juice, called verjuice, has sometimes supplied the place of vinegar, and has been made an ingredient in cooling and restringent gargarisms. At present, they are scarce ever employed for any medicinal use.

MANDRAGORÆ folia: *Mandragoræ fructu rotundo* C. B. *Atropa mandragoræ* Lin. Mandrake; the leaves.

The qualities of this plant are

very doubtful: it has a strong disagreeable smell, resembling that of the narcotic herbs, to which class it is usually referred. It has rarely been any otherwise made use of in medicine, than as an ingredient in one of the old officinal unguents. Both that composition and the plant itself are now rejected from our pharmacopœias.

MANNA [L. E.]; the juice of certain trees of the ash kind, particularly the *fraxinus ornus* Lin. growing in Italy and Sicily. 'When naturally concreted on the plants and scraped off, it is called manna in the tear; but if allowed to exude on straws or chips of wood fastened to the tree, it is called canulated or flaky manna. The common, or fat manna, is got by incisions made after the spontaneous exudation is over, and is in larger masses and of a redder colour. The best Calabrian manna is in oblong, light, friable pieces or flakes, of a whitish or pale yellow colour, and somewhat transparent. The inferior kinds are moist, unctuous, and dark coloured.' Manna is said to be sometimes counterfeited by a composition of sugar and honey, mixed with a little scammony: there is also a factitious manna, which is white and dry, said to be composed of sugar, manna, and some purgative ingredient, boiled to a proper consistence; this may be distinguished by its weight, solidity, untransparent whiteness, and by its taste, which is different from that of manna.

Manna is a mild, agreeable laxative, and may be given with safety to children and pregnant women: nevertheless, in some particular constitutions, it acts very unkindly, producing flatulencies and distension of the viscera; these inconveniences may be prevented by the addition of

of any grateful warm aromatic. Manna operates so weakly as not to produce the full effect of a cathartic, unless taken in large doses; and hence it is rarely given in this intention by itself. It may be commodiously dissolved in the purging mineral waters, or joined to the cathartic salts, senna, rhubarb, or the like. Geoffroy recommends acuating it with a few grains of emetic tartar: the mixture is to be divided into several doses, each containing one grain of the emetic tartar: by this management, he says, bilious serum will be plentifully evacuated, without any nausea, gripes, or other inconvenience. It is remarkable, that the efficacy of this drug is greatly promoted, (if the account of Vallisnieri is to be relied on) by a substance which is itself very slow of operation, cassia. (See the article CASSIA FISTULARIS.) Manna is an ingredient in the electary of cassia [L. E.]

MARGARITÆ [L. E.] Pearls; small concretions of a transparent whiteness, found on the inside of the shell of the *concha margaritifera* or mother-of-pearl fish, as also of certain oysters, mussels, and other shell-fishes. 'Some suppose pearls the product of age or disease in those animals; and the Swedes are said to produce the disease at pleasure, by a mere perforation of the shell.' The pearls most esteemed are brought from the East and West Indies, and distinguished by the names of oriental and occidental: the oriental, which are valued most, have a more shining silver hue than the occidental; these last are somewhat milky: a sort inferior to both these is sometimes met with in our own seas, particularly on the coasts of Scotland. The coarse, rough pearls, and the very small ones which are unfit for other uses, are those gene-

rally employed in medicine. They have been greatly celebrated as cordial, alexipharmac, and comforting the nerves; but the only virtue that can be reasonably expected from them is, that of absorbing acidities in the primæ viæ, in which intention they enter three of the official powders.

MARRUBII folia: *Marrubii albi vulgaris* C. B. *Marrubii vulgaris* Lin. White horehound; the leaves [L. E.]

These have a very strong, not disagreeable smell, and a roughish very bitter taste. Besides the virtues which they possess in common with other strong bitters, they are supposed to be peculiarly serviceable in humoural asthmas and coughs, the yellow jaundice proceeding from a viscosity of the bile, and other chronic disorders. They are doubtless an useful aperient and deobstruent, they promote the fluid secretions in general, and liberally taken loosen the belly. They are an ingredient only in the theriaca [L.]

MARI SYRIACI folia: *Mari cortusi* J. B. *Chamadryos maritima incana frutescentis foliis lanceolatis* Tourn. *Origani Syriaci* Lin. Syrian herb mastich; the leaves [L.]

This is a small shrubby plant, growing spontaneously in Syria, Candy, and other warm climates, and cultivated with us in gardens. The leaves have an aromatic bitterish taste; and when rubbed betwixt the fingers, a quick pungent smell, which soon affects the head, and occasions sneezing: distilled with water, they yield a very acrid, penetrating essential oil, resembling one obtained by the same means from scurvy-grass. These qualities sufficiently point out the uses to which this plant might be applied; at present, it is little otherwise employed

ployed than in cephalic snuffs. It is an ingredient in the *pulvis sternutatorius* of the London Pharmacopœia.

MARI VULGARIS *folia*: *Sampuci five mari mastichen redolentis* C. B. *Thymbræ Hispanicæ majoranæ folio* Tourn. *Thymi mastichinæ* Lin. Herb mastich; the leaves. [L.]

This pungent aromatic plant also is become almost a stranger to practice.

MARS SACCHARATUS [E.] Steel comfits.

This article is chiefly made by the confectioner; and, though little used, has got a place, as being occasionally convenient on account of its sweet taste.

A solution of two parts of fine sugar in water boiled to a candy consistence, is gradually added to one part of purified iron filings, in a vessel hung over a very gentle fire, and constantly shaken, that the filings may be crusted over with the sugar. Starch is previously added, in the proportion of a dram to a pound, to prevent the comfit from running into lumps.

MASTICHE: *Resina pistaciæ lentisci* Lin. [L. E.] Mastich; a resin exuding from the lentisc tree (see *LENTISCUS*), and brought from Chio, in small, yellowish, transparent grains or tears, of an agreeable smell, especially when heated or set on fire. This resin is recommended in old coughs, dysenteries, hæmoptoës, weakness of the stomach, and in general in all debilities and laxity of the fibres. Geoffroy directs an aqueous decoction of it to be used for these purposes: but water extracts little or nothing from this resin; rectified spirit almost entirely

dissolves it: the solution tastes very warm and pungent.

MATRICARIÆ *folia, flores*: *Matricariæ vulgaris seu sativæ* C. B. *Matricariæ Parthenii* Lin. Common wild featherfew or feverfew; the leaves [L.]

This plant is a celebrated antihysterical. Simon Paulli relates, that he has experienced most happy effects from it in obstructions of the uterine evacuations; I have often seen, says he, from the use of a decoction of matricaria and chamomile flowers with a little mugwort, hysterical complaints instantly relieved, the discharge succeed plentifully, and the patient, from a lethargic state, return as it were into life again. Matricaria is likewise recommended in sundry other disorders, as a warm stimulating bitter: all that bitters and carminatives can do, says Geoffroy, may be expected from this. It is undoubtedly a medicine of some use in these cases, though not perhaps equal to chamomile flowers alone, with which the matricaria agrees in sensible qualities, except in being weaker.

MECHOACANNÆ *radix*; the root of an American convolvulus, (*convolvulus Mechoacanna* Lin.) brought from Mechoacan, a province of Mexico, in thin slices like jalap, but larger and of a whitish colour. It was first introduced among us (about the year 1524) as a purgative universally safe, and capable of evacuating all morbid humours from the most remote parts of the body. Soon as jalap became known, Mechoacan gradually lost its reputation, which it has never since been able to retrieve. It is nevertheless by some still deemed an useful cathartic; it has very little smell or taste, and is not apt to offend

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send the stomach; its operation is slow, but effectual and safe. Geofroy affirms, that there is scarce any purgative accompanied with fewer inconveniencies. It seems to differ from jalap only in being weaker; the resins obtained from both have nearly the same qualities, but jalap yields five or six times as much as Mechoacan; hence it is found necessary to exhibit the latter in six times the dose of the former, to produce the same effects.

MEL [L.] Honey.—Honey is a vegetable juice, obtained from the honey comb, either by separating the combs, and laying them flat upon a sieve, through which the honey spontaneously percolates; or by including the comb in canvas bags, and forcing the honey out by a press: the first sort is the purest; the latter is found to contain a good deal of the matter of which the comb is formed, and sundry other impurities: there is another sort still inferior to the two foregoing, obtained by heating the combs before they are put into the press. The best sort is thick, of a whitish colour, an agreeable smell, and a very pleasant taste: both the colour and flavour differ according to the plants which the bees collect it from: that of Narbonne in France, where rosemary abounds, is said to have a very manifest flavour of that plant, and to be imitable by adding to other honey an infusion of rosemary flowers. Honey, considered as a medicine, is a very useful detergent and aperient, powerfully dissolving viscid juices, and promoting the expectoration of tough phlegm: in some particular constitutions it has an inconvenience of griping or proving purgative; this is said to be in some measure prevented, by previously boiling the honey.

MELAMPODIUM [E.] vide **HELLEBORUS NIGER.**

MELILOTI *folia, flores: Meliloti officinarum Germanie C. B. et trifolii meliloti officinalis Lin.* Melilot; the leaves and flowers.

This grows wild in hedges and among corn; and has likewise, for medicinal uses, been cultivated in gardens. The green herb has no remarkable smell; when dry, a pretty strong one; the taste is roughish, bitter, and, if long chewed, nauseous. A decoction of this herb has been recommended in inflammations of the abdomen; and a decoction of the flowers in the fluxus albus. But modern practice rarely employs it any otherwise than in emollient and carminative glysters, and in fomentations, cataplasms, and the like; and in these not often. It formerly gave name to one of the officinal plasters, which received from the melilot a green colour, but no particular virtue.

MELISSÆ *folia: Melissa hortensis C. B. Melissa officinalis Lin.* Balm; the leaves [L. E.]

This plant, when in perfection, has a pleasant smell, somewhat of the lemon kind; and a weak roughish aromatic taste. The young shoots have the strongest flavour; the flowers, the herb itself when old, or produced in very moist rich soils or rainy seasons, are much weaker both in smell and taste. Balm is appropriated, by the writers on the Materia Medica, to the head, stomach, and uterus; and in all disorders of these parts is supposed to do extraordinary service. So high an opinion have some of the chemists entertained of balm, that they have expected to find in it a medicine which should prolong life beyond the usual period. The present

present practice however holds it in no great esteem, and ranks it (where it certainly deserves to be) among the weaker corroborants: in distillation, it yields an elegant essential oil, but in exceeding small quantity; the remaining decoction tastes roughish. Strong infusions of the herb, drank as tea, and continued for some time, have done service in a weak lax state of the viscera: these liquors, lightly acidulated with juice of lemons, turn of a fine reddish colour, and prove an useful, and to many a very grateful drink, in dry parching fevers.

MELONUM *semen: Cucumis melo Lin.* Melons: the seeds. These stand among the four greater cold seeds. They have been sometimes used, with the others of that class, as cooling and emollient; but are at present little taken notice of.

MENTHA CATARIA, vide **NEPETA**.

MENTHÆ VULGARIS *folia: Mentha angustifolia spicata C. B. Mentha viridis Lin.* Garden or spearmint; the leaves [L. E.]

The leaves of mint have a warm, roughish, somewhat bitterish taste; and a strong, not unpleasant, aromatic smell. Their virtues are those of a warm stomachic and carminative: in loss of appetite, nausea, continual retchings to vomit, and (as Boerhaave expresses it) almost paralytic weaknesses of the stomach, there are few simples perhaps of equal efficacy. In colicky pains, the gripes to which children are subject, lenteries, and other kinds of immoderate fluxes, this plant frequently does good service. It likewise proves beneficial in sundry hysterical cases, and affords an useful cordial in languors and other weak-

nesses consequent upon delivery.

The best preparations for these purposes are, a strong infusion made from the dry leaves in water (which is much superior to one from the green herb) or rather a tincture or extract prepared with rectified spirit. These possess the whole virtues of the mint: the essential oil and distilled water contain only the aromatic part; the expressed juice only the astringency and bitterishness, together with the mucilaginous substance common to all vegetables. The essential oil, a simple and spirituous water, and a conserve, are kept in the shops. This herb is an ingredient also in the three alexitereal waters; and its essential oil in the stomach plaster [L.] and stomachic pills [E.]

MENTASTRI *folia: Mentastrispicati folio longiore candicante J. B.* Horse mint; the leaves. This and several other sorts of mint are found wild in moist meadows, marshes, and on the brinks of rivers. They are much less agreeable in smell than spearmint, and have more of a hot unpleasant bitterness.

MENTHÆ PIPERITIDIS *folia: Mentha spicis brevioribus & habitioribus, foliis menthae fusca, sapore servido piperis Raii Synops. Mentha piperita Lin.* Peppermint; the leaves [L. E.]

This species grows wild in some parts of England, in moist watery places, but is much less common than the other sorts. The leaves have a more penetrating smell than any of the other mints, and a much warmer, pungent, glowing taste like pepper, sinking as it were into the tongue. The principal use of this herb is in flatulent colics, languors, and other like disorders: it seems to act as soon as taken, and extend its

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effects through the whole system, instantly communicating a glowing warmth. Water extracts the whole of the pungency of this herb by infusion, and elevates it in distillation. Its officinal preparations are an essential oil, and a simple and spirituous water [*L. E.*]

MENYANTHES, vide **TRIFOLIUM**.

MERCURIALIS *maris & feminae folia: Mercurialis testiculata sive maris, & spicata sive feminae Dioscoridis & Plinii C. B. Mercurialis annua Lin.* Male and female French mercury; the leaves.

These stand among the five emollient herbs; and in this intention are sometimes made use of in glysters. A syrup made from the leaves, given in the dose of two ounces, is said to prove a mild and useful laxative.

There is another sort of mercurialis growing in woods and hedges, which though recommended by some botanic writers, as having the same virtues with the foregoing, and as more palatable, has been lately found possessed of noxious qualities. (See *Raii Synops.* edit. 3. page 138. *Phil. Transf. abr. Lowthorp*, ii. 640.) This may be distinguished from the foregoing, by its being a perennial plant (*Mercurialis perennis Lin.*), larger, having its leaves rough, and the stalk not at all branched; the poisonous *mercurialis*; it is commonly called dog's mercury.

MERCURIUS, vide **ARGENTUM VIVUM**.

MESPILA: *Fructus mespili vulgaris J. B. Mespili Germanici Lin.* The medlar tree; its fruit.

Medlars are scarce ever made use of for any medicinal purpo-

ses. They have a very austere astringent taste, inasmuch as not to be eatable until mellowed by keeping.

MEI ATHAMANTICI *radix: Mei foliis anethi C. B. Aethusa mei Lin.* Spiguel; the root [*L.*]

Spiguel is an umbelliferous plant, found wild in Italy and the warmer parts of Europe, and sometimes also in England. The roots have a pleasant aromatic smell, and a warm pungent bitterish taste: in virtue they are similar to the *levisticum*, from which this root seems to differ only in being weaker and somewhat more agreeable. It is an useful aromatic and carminative, though at present little regarded.

MEZEREI CORTICIS *radix: Laureola folio deciduo, flore purpureo, officinis laureola famina, C. B. Daphnes mezerei Lin.* Mezereon, or spurge-olive; the bark of the root [*E.*]

It is a native of different parts of Europe; it has elegant pale purplish or white flowers, sometimes appearing about the end of January. The root was long used in the Lisbon diet-drink, for venereal complaints, particularly nodes and other symptoms resisting the use of mercury. On chewing it a little, it proves very pungent, and its acrimony is accumulated about the fauces, and is very durable. It has been used in powder combined with some inactive one, as that of liquorice root. It is apt to occasion vomiting and purging; so must be begun in grain-doses and gradually increased. It is often usefully combined with mercury. The bark of the root contains most acrimony, though some prefer the woody part. Mezereon has also been used in tumours

mours and cutaneous eruptions not venereal.

MILII semen : *Milii semine luteo* C. B. *Panici miliacei* Lin. Millet; the seed.

These seeds are frequently employed in food, but hardly ever as medicines: they are sufficiently nutritious, and not difficult of digestion.

MILIUM SOLIS, vide **LITHOSPERMUM.**

MILLEFOLII folia, flores : *Millefolii vulgaris albi, et Millefolii purpurei* C. B. *Achilleæ millefolii* Lin. Milfoil, or yarrow; the leaves and flowers [E.]

This grows plentifully about the sides of fields, and on dry commons, flowering greatest part of the summer. The leaves have a rough bitterish taste, and a faint aromatic smell. Their virtues are those of a very mild astringent; and as such they stand recommended in hæmorrhagies both internal and external, diarrhœas, debility and laxity of the fibres, and likewise in spasmodic hysterical affections. In these cases, some of the Germans have a very high opinion of this herb, particularly Stahl, who esteemed it a very effectual astringent, and, in his language, one of the most certain tonics and sedatives. Its virtues are extracted in great perfection by proof spirit; water takes up its astringency and bitterness, but little of its aromatic flavour; tinctures made in rectified spirit contain both, though rather weaker than those in proof spirit.

The flowers of milfoil are considerably stronger in aromatic flavour than the leaves; in distillation, they yield a small quantity of essential oil, of an elegant blue colour.

The roots, taken up in the spring, have an agreeable, warm, pungent taste. Dr Grew resembles them to contrayerva, and imagines they might in some measure supply its place; this, however, is greatly to be doubted, since there is such a remarkable difference betwixt the two, that whilst one retains its taste for a length of time after it has been brought to us from America, the taste of the other is in great measure lost by drying.

MILLEPEDÆ. *Oniscus asellus* Lin. [L. E.] Woodlice, hoglice, flaters.

These insects are found in cellars, under stones, and in cold moist places: in the warmer countries they are rarely met with. Millepedes have a faint disagreeable smell, and a somewhat pungent, sweetish, nauseous taste. They have been highly celebrated in suppressions of urine, in all kinds of obstructions of the bowels, in the jaundice, weakness of sight, and a variety of other disorders. Whether they have any just title to these virtues, is greatly to be doubted: thus much is certain, that their real effects come far short of the character usually given of them. Their official preparations are, the millepedes dried and powdered.

MINIUM [L.] Red lead; lead calcined to redness. See the article **PLUMBUM.**

MORSUS DIABOLI seu Suo-cisæ radix, folia : *Scabiosæ pratensis nostratis præmorsa radice* Morison. *Scabiosæ arvensis* Lin. Devil's-bit; the leaves and roots.

These stand recommended as alexipharmacs, but they have long given place to medicines of greater efficacy.

MORI fructus: *Mori fructu nigro* C. B. *Mori nigra* Lin. The mulberry tree; its fruit [L.]

This tree is commonly cultivated on account of its fruit, which is rather eaten for pleasure than used as a medicine; it has the common qualities of the other sweet fruits, abating heat, quenching thirst, and promoting the grosser secretions; an agreeable syrup made from the juice, is kept in the shops. The bark of the roots has been in considerable esteem as a vermifuge; its taste is bitter, and somewhat astringent.

MOSCHUS, [L. E.] Musk.

Musk is a grumous substance like clotted blood, found in a little bag, situated near the umbilical region of a particular kind of animal (*Moschus moschiferus* Lin.) met with in China, Tartary, and the East-Indies: the best musk is brought from Tonquin, an inferior sort from Agria and Bengal, and a still worse from Russia.

Fine musk comes to us in round thin bladders; which are generally about the size of a pigeon's egg, covered with short brown hairs, well filled, and without any appearance of having been opened. The musk itself is dry, with a kind of unctuity, of a dark reddish brown, or rusty blackish colour, in small round grains, with very few hard black clots, and perfectly free from any sandy or other visible foreign matter. If chewed, and rubbed with a knife on paper, it looks smooth, bright, yellowish, and free from grittiness. Laid on a red-hot iron, it catches flame, and burns almost entirely away, leaving only an exceeding small quantity of light greyish ashes: if any earthy substances have been mixed with the musk, the quantity of the residuum will readily discover them.

Musk has a bitterish subacid taste; a fragrant smell, agreeable at a distance, but, when smelt near to, so strong as to be disagreeable, unless weakened by the admixture of other substances. If a small quantity be infused in spirit of wine in the cold for a few days, it imparts a deep, but not red tincture: this, though it discovers no great smell of the musk, is nevertheless strongly impregnated with its virtues; a single drop of it communicates to a whole quart of wine a rich musky flavour. The degree of flavour which a tincture drawn from a known quantity of musk, communicates to vinous liquors, is perhaps one of the best criteria for judging of the goodness of this commodity. Neumann informs us, that spirit of wine dissolves ten parts out of thirty of musk, and that water takes up twelve; that water elevates its smell in distillation, whilst pure spirit brings over nothing.

Musk is a medicine of great esteem in the eastern countries: among us, it has been for some time pretty much out of use, even as a perfume, on a supposition of its occasioning vapours; &c. in weak females, and persons of a sedentary life. It appears, however, from late experience, to be, when properly managed, a remedy of good service even against those disorders which it has been supposed to produce. Dr Wall has communicated (in the Philosophical Transactions, n° 474), an account of some extraordinary effects of musk in convulsive and other diseases, which have too often baffled the force of medicine. The doctor observes, that the smell of perfumes is often of service, where the substance taken inwardly, and in considerable quantity, produces the happiest effects: that two persons, labouring under a subfultus tendinum, extreme anxiety,

xiety, and want of sleep, from the bite of a mad dog, by taking two doses of musk, each of which was sixteen grains, were perfectly relieved from their complaints. He likewise observes, that convulsive hiccups, attended with the worst symptoms, were removed by a dose or two, of ten grains: and that in some cases, where this medicine could not, on account of strong convulsions, be administered to the patient by the mouth, it proved of service when injected as a glyster. He likewise adds, that under the quantity of six grains, he never found much effect from it; but that, taken to ten grains and upwards, it never fails to produce a mild diaphoresis, without at all heating or giving any uneasiness; that on the contrary, it eases pain, raises the spirits, and that after the sweat breaks out the patient usually falls into a refreshing sleep; that he never met with any hysterical person, how averse soever to perfumes, but could take it, in the form of a bolus, without inconvenience. To this paper is annexed an account of some farther extraordinary effects of musk, observed by another gentleman. Repeated experience has since confirmed its efficacy in these disorders. I have myself frequently given it with remarkable success; and sometimes increased the dose as far as twenty grains every four hours, with two or three spoonfuls of the musk julep between. The julep is the only official preparation of it.

‘Musk in scruple or half-dram doses, still retains its character in nervous diseases, particularly in those of the convulsive kind; it is combined with opium in tetanus, and with mercury in rabies canina.’

MYROBALANI. Myrobalans, dried fruits brought from the

East-Indies; their outward part, freed from the stone.

Five kinds of myrobalans were formerly directed as officinals: (1) The yellow, *myrobalani teretes citrini* C. B. *Myrobalani citrinae* Lin. (2) The chebule, *myrobalani maxima oblonga angulosa* C. B. (3.) The Indian or black, *myrobalani nigra octangulares* C. B. (4) The belliric, *myrobalani rotunda bellirica* C. B. (5) The emblic, *myrobalani emblica, in segmentis nucleum habentes, angulosa*, J. B. The fruit of *phyllanthus emblica* Lin.

All the myrobalans have a low degree of purgative virtue. They have also an astringent quality, discoverable by the taste, from their use among the Indians for tanning leather, and from their striking a black colour with chalybeate solutions: in consequence of this, they are supposed to strengthen the bowels after their operation as a cathartic is over. Nevertheless their purgative virtue is so inconsiderable, that practitioners have for a long time laid them entirely aside in that intention; and the college of Edinburgh, as well as that of London, has now rejected them from the catalogue of official simples.

MYRRHA: *Gummi resina*, [L. E.] Myrrh; gum resin.

Myrrh is a concrete gummy resinous juice brought from the East-Indies, in glebes or drops, of various colours and magnitudes. The best sort is of a brown or reddish yellow colour, somewhat transparent; of a lightly pungent, bitter taste, with an aromatic flavour, tho’ not sufficient to prevent its proving nauseous to the palate; and a strong not disagreeable smell. The medical effects of this aromatic bitter are, to warm and strengthen the viscera, and dissolve thick, tenacious juices: it frequently occasions a mild diaphoresis

phoresis, and promotes the fluid secretions in general.

Hence it proves serviceable in languid cases, diseases arising from a simple inactivity, those female disorders which proceed from a cold, mucous, sluggish indisposition of the humours, suppressions of the uterine discharges, cachectic disorders, and where the lungs and thorax are oppressed by viscid phlegm. Myrrh is likewise supposed in a peculiar manner to resist putrefaction in all parts of the body; and in this light stands recommended in malignant, putrid, and pestilential fevers, and in the small-pox, in which last it is said to accelerate the eruption.

‘The present practice does not seem to expect any peculiar virtue from myrrh; and its supposed effects in phthisis, hysteria, and amenorrhœa, are not trusted to.’

Rectified spirit extracts the fine aromatic flavour and bitterness of this drug, and does not elevate any thing of either in evaporation: the gummy substance left by this menstruum has a disagreeable taste, with scarce any thing of the peculiar flavour of the myrrh: this part dissolves in water, except some impurities which remain. In distillation with water, a considerable quantity of a ponderous essential oil arises, resembling in flavour the original drug. Myrrh is the basis of an officinal tincture [*L. E.*] and of the elixir and powder [*L.*] It is an ingredient in the aloetic wine or elixir proprietatis [*L. E.*] the gum pills, Rufus's pills, mithridate and theriaca [*L.*], and stomachic pills [*E.*]

MYRRHIDIS *folia, semen:* *Myrrhidis magno semine, longo, sulcato* *J. B.* Sweet cicely; the leaves and seeds.

This plant is cultivated in gardens; it agrees in quality with the *charesolium*.

MYRTI *bacca:* *Myrti communis Italica* *C. B.* *Myrti communis* *Lin.* Myrtle; the berries.

This is an evergreen shrub, growing in Italy, and cultivated in our botanic gardens. The leaves and berries have been sometimes made use of as astringents, but are not at present regarded.

NAPI *semen:* *Napi dulcis officinarum:* *Napi sativa* *C. B.* *Brassica napi* *Lin.* Sweet navew or navew gentle; the seeds [*L.*]

This is a sort of turnep, sown in some of our gardens for culinary use: the roots are warmer than the common turnep. The seeds have a bitterish taste, accompanied with a faint aromatic flavour: abundance of virtues have been ascribed to them, as attenuating, detergent, alexipharmac, and others; at present, they are of no farther use in medicine than as an ingredient in the theriaca.

NAPI SYLVESTRIS *semen:* *Napi sylvestris* *C. B.* *Brospica napi* *var. Lin.* Rape; the seeds.

This has little other external difference from the foregoing, than being smaller: it grows wild upon dry banks and among corn. The seeds of this are warmer and more pungent than those of the garden sort: the only use, however, they are applied to, is the preparation of the oil called rape oil, which is obtained by bruising and pressing the seeds: large quantities of the plant are cultivated for this purpose in the isle of Ely.

NARDUS CELTICA: *Radix nardi Celtica* *Dioscoridis* *C. B.* *Valeriana Celtica* *Tourn. et Lin.* Celtic nard [*L.*]; the root, brought from the Alps, &c.

This root consists of a number of fibres, with the lower part of the stalks

stalks adhering; these last are covered with thin yellowish scales, the remains of the withered leaves.

NARDUS INDICA [L.] *Nardus Indica, quæ spica, spica nardi, et spica Indica officinarum C. B. Andropogon nardus Lin.* Indian nard, or spikenard, brought from the East-Indies.

This is a congeries of small fibres issuing from one head, and matted close together, so as to form a bunch about the size of the finger, with some small strings at the opposite end of the head. The matted fibres (which are the part chosen for medicinal purposes) are supposed by some to be the head or spike of the plant, by others the root: they seem rather to be the remains of the withered stalks, or the ribs of the leaves: sometimes entire leaves and pieces of stalks are found among them: we likewise now and then meet with a number of these bunches issuing from one root.

Both the nards have a warm, pungent, bitterish taste; and a strong, not very agreeable smell. They are stomachic and carminative; and said to be alexipharmac, diuretic, and emmenagogue: their only use at present is as ingredients in the mithridate and theriaca.

NASTURTII AQUATICI *folia, herba: Nasturtii aquatici fupini C. B. Sifymbrii nasturtii aquatici Lin.* Water-creffes: the leaves [L.], herb [E.]

This plant grows wild in rivulets, and the clearer standing waters; its leaves remain green all the year, but are in greatest perfection in the spring. They have a quick pungent smell (when rubbed betwixt the fingers), and an acrid taste, similar to that of *cochlearia*, but weaker. As to their virtues, they

are among the milder aperient antiscorbutics. Hoffman has a mighty opinion of this plant, and recommends it as of singular efficacy for accelerating the circulation, strengthening the viscera, opening obstructions of the glands, promoting the fluid secretions, and purifying the blood and humours: for these purposes, the expressed juice, which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, and continued for a considerable time. The juice is an ingredient in the *succi scorbutici* of the shops.

NASTURTII HORTENSIS *folia, semen: Nasturtii vulgaris seu hortensis tenuiter divisi Morison, Lepidii sativi Lin.* Garden creffes; the leaves and seeds.

The leaves of garden creffes make an useful salad in scorbutic habits: in taste and medical virtues, they are similar to the foregoing, but much weaker. The seeds are also considerably more pungent than the leaves.

NEPETÆ *folia: Mentha catariæ vulgaris et majoris C. B. Nepetæ catariæ Lin.* Nep, or catmint; the leaves [L.]

This plant is commonly cultivated in our gardens, and is sometimes also found growing wild in hedges and on dry banks. It is a moderately aromatic plant, of a strong smell, not ill resembling a mixture of mint and pennyroyal; of the virtues of which it likewise participates.

NEPHRITICUM LIGNUM: *Lignum peregrinum, aquam caruleam reddens C. B.* Nephritic wood.

This is an American wood, (of the *guilandina moringa Lin.*) brought to us in large, compact, ponderous pieces, without knots, of

of a whitish or pale yellow colour on the outside, and dark coloured or reddish within: the bark is usually rejected. This wood imparts to water or rectified spirit a deep tincture; appearing, when placed betwixt the eye and the light, of a golden colour; in other situations, blue: pieces of another wood are sometimes mixed with it, which give only a yellow colour to water. The nephritic wood has scarce any smell, and very little taste. It stands recommended in difficulty of urine, nephritic complaints, and all disorders of the kidneys and urinary passages; and is said to have this peculiar advantage, that it does not, like the warmer diuretics, heat or offend the parts. Practitioners, however, have not found these virtues warranted by experience.

NICOTIANÆ folia: *Nicotianæ latifolia majoris* C. B. *Nicotianæ tabaci* Lin. Tobacco; the leaves [L.]

This plant was first brought into Europe, about the year 1560, from the island Tobago in America; and is now cultivated for medicinal use, in our gardens: the leaves are about two feet long, of a pale green colour whilst fresh, and when carefully dried of a lively yellowish. They have a strong, disagreeable smell, like that of the narcotic plants; and a very acrid burning taste. Taken internally, they prove virulently cathartic and emetic, occasioning almost intolerable cardialgic anxieties. By boiling in water, their virulence is abated, and at length destroyed: an extract made by long coction is recommended by Stahl and other German physicians, as a safe and most effectual aperient, expectorant, detergent, &c. but this medicine, which is extremely precarious and uncertain in strength, has never come into esteem among us. To-

bacco is sometimes used externally in unguents, for destroying cutaneous insects, cleansing old ulcers, &c. Beaten into a mass with vinegar or brandy, it has sometimes proved serviceable for removing hard tumours of the hypochondres; an account is given in the Edinburgh essays of two cases of this kind cured by it.

‘Injections by the anus of the smoke or decoction have been used with advantage in cases of obstinate constipation threatening ileus, of incarcerated hernia, of ascarides, of spasmodic asthma, and of persons apparently dead from drowning or other sudden causes. It has been used internally in form of syrup, conserve, and infusion, in cases of worms, epilepsy, amenorrhœa, asthma, &c. but it is certainly too active to be thus ventured on. An infusion of its ashes, recommended in dropsy, is not probably different from other such vegetable lixivia.’

There is another sort of tobacco found wild on dunghills, in several parts of England: this is called by C. Bauhine *Nicotiana minor*, by Gerard *Hyoscyamus luteus*; *Nicotiana rustica* Lin. It seems to agree in quality with the hyoscyamus formerly mentioned, though (as Dale informs us) often substituted in our markets for the true tobacco: from which it may be distinguished by the leaves being much smaller, and the flowers not reddish as those of the officinal sort, but of a yellowish green colour.

NIGELLÆ semen: *Nigella flore minore simpliciter candido* C. B. *Nigella fativa* Lin. Fennel-flower; the seeds.

This plant is sown annually in some of our gardens; the seeds most esteemed are brought from Italy. They have a strong, not unpleasant smell; and a subacrid, somewhat unctuous

unctuous disagreeable taste. They stand recommended as aperient, diuretic, &c. but have long been strangers to practice, and are by some suspected to have noxious qualities.

NITRUM [*L. E.*] Nitre, or saltpetre; a salt, extracted in Persia and the East-Indies, from certain earths that lie on the sides of hills; and artificially produced, in some parts of Europe, from animal and vegetable matters rotted together (with the addition of lime and ashes), and exposed for a length of time to the air, without the access of which, nitre is never generated: the salt extracted from the earth, &c. by means of water, is purified by colature and crystallization.

Pure nitre dissolves in about six times its weight of water, and concretes again into colourless transparent crystals; their figure is that of an hexagonal prism, terminated by a pyramid of an equal number of sides. It readily melts in the fire; and in contact with fuel deflagrates, with a bright flame and considerable noise; after the detonation is over, a large quantity of alkaline salt is found remaining. The taste of nitre is sharp, penetrating, and bitterish, accompanied with a certain sensation of coldness.

Nitre is a medicine of celebrated use in many disorders. Besides the aperient quality of neutral salts in general, it has a manifestly cooling one, by which it quenches thirst, and abates febrile heats and commotions of the blood: it has one great advantage above the refrigerating medicines of the acid kind, that it does not coagulate the animal juices; blood, which is coagulated by all the mineral acids, and milk, &c. by acids of every kind, are by nitre rendered more dilute, and preserved from coagulation: it

nevertheless somewhat thickens the thin, serous, acrimonious humours, and occasions an uniform mixture of them with such as are more thick and viscid; by this means preventing the ill consequences which would otherwise ensue from the former, though it has not, as Juncker supposes, any property of really obtunding acrimony. This medicine for the most part promotes urine; sometimes gently loosens the belly; but in cold phlegmatic habits, very rarely has this effect, though given in large doses: alvine fluxes, proceeding from too great acrimony of the bile or inflammation of the intestines, are suppressed by it: in choleric and febrile disorders, it generally excites sweat; but in malignant cases, where the pulse is low, and the strength lost, it retards this salutary evacuation and the eruption of the exanthemata.

Dr Stahl has written an express treatise upon the medical virtues of nitre; in which he informs us, from his own experience, that this salt added to gargarisms employed in inflammations of the fauces in acute fevers, thickens the salival moisture upon the palate and fauces into the consistence of a mucus, which keeps them moist for a considerable time; whereas, if nitre is not added, a sudden dryness of the mouth immediately ensues: that in nephritic complaints, the prudent use of nitre is of more service than any of the numerous medicines usually recommended in that disease: that nitre gives great relief in suppression and heat of urine, whether simple or occasioned by a venereal taint; that it is of great service in acute and inflammatory pains of the head, eyes, ears, teeth, &c. in all erysipelatous affections whether particular or universal, and likewise in chronic deliriums; that in diarrhoea happening in petechial fevers, nitre mixed

mixed with absorbents and diaphoretics, had the best effects, always putting a stop to the flux, or rendering the evacuation salutary; that in diarrhoea happening in the small-pox it had been employed with the like success, two doses or three at most (consisting of two, three, or four grains each, according to the age, &c. of the patient) given at the interval of two or three hours, putting a stop to the flux, after the bezoardic powders, both with and without opium, had been given without success. The same author recommends this salt likewise as a medicine of singular service in choleras attended with great anxieties and heat of the blood; in the stultent spasmodic heartburns familiar to hypochondriacal people; and the loss of appetite, nausea, vomiting, &c. which gouty persons are sometimes seized with upon the pains of the feet, &c. suddenly remitting. In cases of this last kind, the use of nitre surely requires great caution, although the author assures us that no bad consequences are to be feared from it. Nevertheless he observes, that in a phthisis and ulcerous affection, it has been found to be of no service; and that therefore its use may be superseded in these complaints. Indeed, in disorders of the lungs in general, it is commonly reckoned to be rather hurtful than beneficial. In modern practice, it is given in form of powder or julep as a refrigerant and diuretic; and some recommend it much in hæmoptysis, though in some constitutions it is alleged to have a peculiar influence on the lungs, occasioning dyspnoea even when given by the anus. It is said to dispose to cramps in the stomach, and to be particularly unfriendly to gouty stomachs.

The usual dose of this medicine among us is from two or three grains to a scruple; though it may be

given with great safety, and generally to better advantage, in larger quantities: the only inconvenience is its being apt to sit easy on the stomach. Some have affirmed, that this salt loses half its weight of aqueous moisture by fusion, and consequently that one part of melted nitre is equivalent to two of the crystals; but it did not appear, upon several careful trials, to lose so much as one twentieth of its weight. The only officinal preparation of nitre is the troches [L. E.] A corrosive acid spirit is also extracted from it; see Part II. It is employed likewise in operations on metallic bodies, for promoting their calcination.

NUMMULARIÆ folia: *Lyfimachia humifusa*, folio rotundiore, flore luteo Tourn. *Lyfimachia nummularia* Lin. Moneywort, or herb two-pence; the leaves.

This grows spontaneously in moist watery places, and creeps on the ground with two little roundish leaves at each joint. Their taste is subastringent, and very lightly acid: hence they stand recommended by Boerhaave in the hot scurvy, and in uterine and other hæmorrhagies. But their effects are so inconsiderable, that common practice takes no notice of them.

NUX MOSCHATA [L. E.] *Nux moschata fructu rotundo* C. B. *Myristica officinalis* Lin. Nutmegs; the kernel of a roundish nut which grows in the East-Indies. The outside covering of this fruit is soft and fleshy like that of a walnut, and spontaneously opens when the nut grows ripe: immediately under this lies the mace (see the article MACIS) which forms a kind of reticular covering; through the fissures whereof appears a hard woody shell that includes the nutmeg. These

These kernels have long been made use of both for medicinal and culinary purposes, and deservedly looked upon as a warm agreeable aromatic. They are supposed likewise to have an astringent virtue; and are employed in that intention in diarrhoeas and dysenteries. Their astringency is said to be increased by torrefaction, but this does not appear to the taste: this treatment certainly deprives the spice of some of its finer oil, and therefore renders it less efficacious to any good purpose; and, if we may reason from analogy, probably abates of its astringency. Nutmegs distilled with water, afford a large quantity of essential oil, resembling in flavour the spice itself; after the distillation, an insipid sebaceous matter is found swimming on the water; the decoction, inspissated, gives an extract of an unctuous, very lightly bitterish taste, and with little or no astringency. Rectified spirit extracts the whole virtue of nutmegs by infusion, and elevates very little of it in distillation: hence the spirituous extract possesses the flavour of the spice in an eminent degree.

Nutmegs yield to the press (heated) a considerable quantity of limpid yellow oil, which in cooling concretes into a sebaceous consistence. In the shops we meet with three sorts of unctuous substances, called oil of mace, though really expressed from the nutmeg. The best is brought from the East-Indies, in stone jars; this is of a thick consistence, of the colour of mace, and an agreeable fragrant smell; the second sort, which is paler coloured and much inferior in quality, comes from Holland in solid masses, generally flat and of a square figure: the third, which is the worst of all, and usually called common oil of mace, is an artificial composition of *sebum*, palm oil, and the like, flavoured

with a little genuine oil of nutmeg. These oils yield all that part in which their aromatic flavour resides, in distillation to water, and to pure spirit by infusion: the distilled liquor and spirituous tincture nearly resemble in quality those prepared immediately from the nutmeg. The officinal preparations of nutmegs are, a spirituous water, essential oil, and the nutmegs in substance roasted [L.] The nutmeg itself is used in the compound horseradish water, compound spirit of lavender, cordial confection, cardialgic troches, and syrup of buckthorn [L.]; its essential oil, in the volatile aromatic spirit [L.]; and the expressed oil in mithridate and theriaca, stomachic and cephalic plasters [L.]

NUX PISTACHIA: *Nucleus à fructu Pistaciae Raii; Pistachia vera Lin.* Pistachio.

This is a moderately large nut, containing a kernel of a pale greenish colour, covered with a reddish skin. The tree which produces it, grows spontaneously in Persia, Arabia, and several islands of the Archipelago: it bears likewise the colds of our own climate, so as to have produced fruit not inferior to that which we receive from abroad. Pistachio nuts have a pleasant, sweet, unctuous taste, resembling that of almonds. They are ranked amongst the analeptics; and are by some much esteemed in certain weaknesses, and in emaciated habits.

• **NUX VOMICA** is the seed of the *strychnos nux vomica Lin.* a tree growing in the East Indies, where it is said to be used as a specific against the bite of a species of water-snake. It is considerably bitter and deleterious; but has been used in doses from five to ten grains twice

a-day or so, in intermittents, particularly obstinate quartans, and in contagious dysentery. The *Strychnus Ignatii* is a tree of the same kind producing gourd-like fruit, the seeds of which are improperly called St Ignatius's beans. These, as also the woods or roots, of some such trees, called *lignum colubrinum* or snakewood, are very narcotic bitters like the *nux vomica*.'

NYMPHÆÆ ALBÆ *radix, flores: Nymphææ albæ majoris C. B. Nymphææ albæ Lin.* White water-lily; the root and flowers.

This grows in rivers and large lakes, flowering usually in June. The roots and flowers have a rough, bitterish, glutinous taste; (the flowers are the least rough); and when fresh, a disagreeable smell, which is in great measure lost by drying: they are recommended in alvine fluxes, glects, and the like. The roots are supposed by some to be in an eminent degree narcotic, but on no very good foundation. *Lindestolpe* informs us, that in some parts of Sweden they were in times of scarcity used as food, and did not prove unwholesome.

OCHRA. Yellow ochre: a soft friable ore of iron, of a yellow colour, dug in several parts of England. It possesses the virtues of the calces of iron and hæmatites; but in so low a degree, that the shops have deservedly rejected it; its principal use is as a pigment.

OCIMI folia: *Ocimi vulgatioris C. B. Ocimi basilici Lin.* Basil; the leaves.

This is a small plant, raised annually in our gardens: it flowers in June and July, and produces its seeds in August, but rarely perfects them in this country. The leaves

have a soft, somewhat warm taste; and when rubbed, a strong unpleasant smell, which by moderate drying becomes more agreeable. They are said to attenuate viscid phlegm, promote expectoration, and the uterine secretions; but have not for a long time been regarded in practice.

OCULI CANCRORUM. See **CANCORUM OCULI.**

ÆNANTHE CROCATÆ *Lin.* Hemlock dropwort.

'This is one of three species of the genus *ænanthe*, belonging to the umbelliferous class, and natives of Great Britain. It grows in moist places, with pinnated leaves, ribbed stalks, and white thick short bunchy roots. It is known as a virulent poison; but the juice of the root, or the infusion of the leaf, has been recommended in chronic eruptions. It proves diuretic, and is apt to occasion vertigo and sickness.'

OLEUM STILLATITIUM

Caryophyllorum aromaticorum.

Cinnamomi.

Corticis limonum

vulgo Essentia.

Florum aurantium

Hispalensium.

Terebinthina.

OLEUM EXPRESSUM

Baccarum Lauri.

Seminum lini.

Nucis moschata, oleum macis vulgo dict.

Palma.

Seminum ricini.

The Edinburgh college orders these to be imported. See Part III.

OLIVÆ earumque oleum expressum: *Fructus oleæ sativæ C. B. Oleæ Euro-*

Europeæ Lin. The olive tree; the fruit and its expressed oil. [*L. E.*]

This tree grows in the southern parts of France, in Spain, Italy, and other warm countries: with us it is usually preserved in the green-houses of the curious, though it will bear our ordinary winters in the open air, and produce very good fruit. Olives have an acrid, bitter, extremely disagreeable taste: pickled (as we receive them from abroad) they prove less disagreeable; the Lucca olives, which are smaller than the others, have the weakest taste; the Spanish, or larger, the strongest; the Provence, which are of a middling size, are generally the most esteemed.

The oil obtained from this fruit has no particular taste or smell, and does not greatly differ in quality from oil of almonds. Authors make mention of two sorts of this oil, one expressed from the olives when fully ripe, which is our common oil olive; the other, before it has grown ripe; this is called *oleum immaturum*, and *emphacinum*. Nothing is met with in the shops under this name; and Lemery affirms, that there is no such oil; unripe olives, yielding only a viscid juice to the press. From the ripe fruit, two or three sorts are obtained, differing in degree of purity: the purest runs by light pressure: the remaining magma, heated and pressed more strongly, yields an inferior sort, with some dregs at the bottom, called *amurca*. All these oils contain a considerable portion of aqueous moisture, and a mucilaginous substance; which subject them to run into a putrid state: to prevent this, the preparers add some sea salt, which, imbibing the aqueous and mucilaginous parts, sinks with them to the bottom; by this means the oil becomes more homogeneous, and consequently less susceptible of alteration. In its passage

to us, some of the salt, thrown up from the bottom by the shaking of the vessel, is sometimes mixed with and detained in the oil, which, in our colder climate, becomes too thick to suffer it freely to subside; and hence the oil is sometimes met with of a manifestly saline taste. Oil olive is used in the simple balsam of sulphur, Locatelli's balsam, and several ointments. It is oftener employed in this last intention than the other expressed oils, but more rarely for internal medicinal purposes.

OLIBANUM [*L. E.*], a gummy resin, the product of the *Juniperus Lycia Lin.* brought from Turkey and the East Indies, usually in drops or tears, like those of mastich, but larger, of a pale yellowish, and sometimes reddish colour; a moderately warm pungent taste, and a strong, not very agreeable smell. This drug has received many different appellations, according to its different appearances: the single tears are called simply *olibanum*, or *thus*: when two are joined together, they have been called *thus masculum*, and when two were very large, *thus femininum*: sometimes four or five, about the bigness of filberds, are found adhering to a piece of the bark of the tree which they exuded from; these have been named *thus corticosum*; the finer powder which rubs off from the tears in the carriage, *mica thuris*; and the coarser powder, *manna thuris*. This drug is not however, in any of its states, what is now called *thus* or *frankincense* in the shops; (see the article **THUS**.)

Olibanum consists of about equal parts of a gummy and resinous substance, the first soluble in water, the other in rectified spirit. With regard to its virtues, abundance have been attributed to it, particularly in disorders

disorders of the head and breast, in hæmoptoës, and in alvine and uterine fluxes: but its real effects in these cases are far from answering the promises of the recommenders. Riverius is said to have had large experience of the good effects of this drug in pleurifies, especially epidemic ones: he directs a scooped apple to be filled with a dram of olibanum, then covered and roasted under the ashes; this is to be taken for a dose, three ounces of carduus water drank after it, and the patient covered up warm in bed: in a short time, he says, either a plentiful sweat, or a gentle diarrhœa, ensues, which carries off the disease. Geoffroy informs us, that he has frequently made use of this medicine, after venæsection, with good success; but acknowledges that it has sometimes failed. Olibanum is an ingredient in the *pulvis e succino, theriacal* [L.]

ONONIDIS: *Anonidis, sive A-restæ bovis, radix: Anonidis spinosæ flore purpureo C. B. Ononidis spinosæ Lin.* Rest-harrow, cammock, or petty-whin; the root.

This plant grows wild in waste grounds, and dry-fields. The root has a disagreeable smell, and a nauseous sweetish taste: it stands recommended as an aperient and diuretic; but has never been much regarded among us.

OPHIOGLOSSI folium: *Ophioglossi vulgati C. B. Adder's tongue; the leaf.*

This plant has only one leaf, with a slender stalk arising from the bottom of it, dented about the edges, and supposed to resemble the tongue of a serpent: it grows wild in moist meadows. Scarce any other virtues are attributed to it than those of a vulnerary.

OPIUM: *Succus inspissatus pæpaveris somniferi Lin.* Opium; an inspissated juice.

This juice has not yet been collected in quantity in Europe. Egypt, Persia, and some other provinces of Asia, have hitherto supplied us with this commodity: in those countries, large quantities of poppies are cultivated for this use. The opium prepared about Thebes in Egypt, hence named Thebaic opium, has been usually esteemed the best; but this is not now distinguished from that collected in other places. This juice is brought to us in cakes or loaves, covered with leaves, and other vegetable matters, to prevent their sticking together: it is of a solid consistence, yet somewhat softish and tenacious, of a dark reddish brown colour in the mass, and when reduced into powder, yellow; of a faint disagreeable smell, and a bitterish taste, accompanied with a pungent heat and acrimony.

In the province of Bahar in the East Indies, it is said, the poppy seeds are sown in October or November at about eight inches distance; and are well watered till the plants are about half a foot high, when a compost of nitrous earth, dung, and ashes, is spread over the areas; and a little before the flowers appear, they are again watered profusely till the capsules are half grown: and then the opium is collected; for when fully ripe, they yield little juice. Two longitudinal incisions, from below upwards, without penetrating the cavity, are made at sunset for three or four successive evenings; and then they are allowed to ripen their seeds. In the morning the juice is scraped off with an iron scoop, and worked in an earthen pot in the sun's heat till it be of a consistence to be formed into thick cakes of about four pounds weight, which are

are covered over with the leaves of poppy or tobacco, and dried. It is said to be adulterated with various unknown substances, with the extract of the poppy plant procured by boiling, and even with cow-dung. It is purified by reducing it to a pulp with hot water, and strongly pressing it while hot through a linen cloth from its impurities. It is then evaporated by a water-bath or other gentle heat to its original consistence. This extract is found to contain a resin, a kind of essential oil, a principle of odour, an essential salt, and a soapy extract.

Opium has a reddish brown colour; a strong peculiar smell; a taste at first nauseous and bitter, and soon becoming acrid and warm; and it appears to have some astringency, as a watery tincture of it forms an ink with a chalybeate solution.

The external and internal effects of opium appear to be various in different constitutions, and in the same at different times. In general, when applied to the tongue, the nose, the eye, or any part deprived of skin, it stimulates; and according to the quickness and degree of this stimulus, the sensibility of the parts seems to be the sooner and the more diminished. Some allege, that when applied to the skin it inflames it, discusses tumour, allays pain and spasm, procures sleep, and produces all the other salutary or dangerous effects which result from its internal use; while others allege, that thus applied it has little or no effect whatever. Mixed with a caustic, it diminishes its power, probably by somewhat saturating the caustic, or deadening the part to its action. It sometimes allays the pain of a carious tooth; and a watery solution of it has been used in various ulcers, certain ophthalmias, and virulent gonorrhœa. Taken into the stomach, or thrown up the intestines, its ef-

fects appear to be at first stimulant; and many are of opinion, that opium differs from wine only in its stimulus being more sudden, diffusive, and complete, and in doing in a small dose what wine can only do in a large one. The effects of each are to give a temporary vigour both to body and mind, to increase the disposition to venery, to produce the various delirium of ebriety, sometimes attended with heat and watchfulness, more commonly with moisture, itchiness, drowsiness, and sleep or stupor, vomiting, convulsions, slow intermitting pulse, death. The operation of opium or wine is often succeeded by debility, lowness of spirits, sickness, thirst, vertigo, headache, tremors, &c. which symptoms are often relieved by a dose of either; the ultimately debilitating effects of the habitual use of either are the same; both are contraindicated in a plethoric, active, inflammatory state; both are occasionally used in every other affection; and in all hopeless cases, both are the greatest means of solace.

Some practitioners use opium in active, inflammatory cases, seemingly early, at least before such evacuation as would appear to be adequate. In such cases, the discharge perhaps it usually occasions by the skin may be sufficient. It is said sometimes to produce a general relaxation of the excretories, but more commonly of those chiefly on the surface. It is thus, perhaps, it so frequently diminishes the other excretions; and if this circumstance be properly attended to, it may be used in every disease, however inflammatory at first, as soon as exhaustion and debility appear, attended with watchfulness, pain, spasm, cough, any increased, or indeed suppressed discharge, or gangrene.

It is found of great use after the inflammatory stage, in allaying

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ing the symptoms, and preventing the symptomatic fever occasioned by wounds.

In intermittents, it is said to have been used with good effect before the fit, in the cold stage, in the hot stage, and during the interval. Given in the hot stage, it, as well as wine and volatile alkali, has been observed to allay the heat, thirst, headache and delirium, to induce sweat and sleep, to cure the disease with the less bark, and without leaving abdominal obstructions or dropsy.

From these effects it promises to be useful in typhous fevers; and in it some place their chief confidence. Wine, bark, and acids, are also general remedies; many respectable physicians have still a high opinion of antimonials; and some of great experience trust almost entirely to cleanliness, fresh air, a diluent diet, and in open belly.

‘ In small-pox, when the convulsions before eruption are frequent and considerable, portending the confluent or typhous kind, opium is liberally used. It is likewise given from the fifth day onwards; and is found to allay the pain of suppuration, to promote the ptyalism, and to be otherwise useful.

‘ In dysentery, after the use of gentle laxatives, or along with them, opium, independently of any effect it may have on the fever, is of consequence in allaying the tormina and tenesmus, and in obviating that laxity of bowels which is so frequently a relief.

‘ In diarrhœa, the disease itself generally carries off any acrimony that may be a cause, and then opium is used with great effect. Even in the worst symptomatic cases, it seldom fails to alleviate.

‘ In cholera and pyrosis, it is almost the only thing trusted to.

‘ In cholic, it is employed with laxatives; and no doubt often prevents

ileus and inflammation, by relieving the spasm. Even in ileus and in incarcerated hernia, it is often found to allay the vomiting, the spasms, the pain, and sometimes to diminish the inflammation, and prevent the gangrene of the strangulated gut.

‘ It is given to allay the pain and favour the descent of calculi, and to relieve in jaundice and dysuria proceeding from spasm.

‘ It is of acknowledged use in the different species of tetanus; affords relief to the various spasmodic symptoms of dyspepsia, hysteria, hypochondriasis, asthma, rabies canina, &c. and has been found useful in some kinds of epilepsy.

‘ In dropsy, there are some cases mentioned in which small doses of it are said to have proved a cure.

‘ Of late, in doses gradually increased to five grains, three, four, or even six times a-day, it has been used in syphilis, and there are some unequivocal accounts of its success.

‘ It is found useful in certain cases of threatened abortion, and lingering delivery, in convulsions during parturition, in the after-pains and excessive flooding.

‘ The only form perhaps necessary for opium is that of pill; and as it is so soluble in every menstruum, there seems the less occasion for the addition of either gum or soap. This form is more apt to sit on the stomach, but requires rather more time to produce its effects. The administration of opium to the unaccustomed, is sometimes very difficult. The requisite quantity of opium, as of drink, is wonderfully different in different persons, and in different states of the same person. It does not, however, appear certain that those who can bear the most drink require the largest dose of opium. A quarter of a grain will in one adult produce effects which ten times the quantity will not

not do in another; and a dose that might prove fatal in cholera or choleric, would not be perceptible in many cases of tetanus or mania. The lowest fatal dose to the unaccustomed, as mentioned by authors, seems to be four grains; but a dangerous dose is so apt to puke, that it has seldom time to occasion death. When given in too small a dose, it is apt to produce watchfulness, disturbed sleep, and other disagreeable consequences; and in some cases it seems impossible to be made agree in any dose or form. Some prefer the repetition of small doses, others the giving of a full dose at once. In some it seems not to have its proper effect till after a considerable time. The operation of a moderate dose is supposed by some to last about eight hours from the time of taking it.

Pure opium is partially soluble in water and in rectified spirit, and totally in proof-spirit, wine, or vinegar. Water rubbed with opium, and decanted repeatedly till it come off colourless, yields, on gentle evaporation, an extract which some use and recommend as one of the best preparations of this substance, and which requires to be given in double the dose of common opium.

It is said, that alkalies diminish its soporific effects; that the fixed render it diuretic, the volatile determine it to the skin; and that acids destroy its activity almost entirely.

The occasional bad effects of opium may result from the same power by which, in other states of the system, it proves beneficial. The methods, therefore, proposed of correcting these by roasting, fermentation, long-continued digestion, repeated solutions and distillations, have not succeeded.

The officinal preparations of opium are the thebaic extract, or strained opium, and a vinous [L.]

and a spirituous [E.] tincture. It is a chief ingredient in several compositions, as the paregoric elixir [L. E.], saponaceous and storax pills [L.], thebaic or pacific pills [E.], the compound powder of bole, scordium and amber, electuary of scordium, confectio paulina, philonium, mithridate, theriaca [L.], anodyne balsam, confectio Japonica, trochisci beccihici cum opio [E.]

OPOBALSAMUM [L.] *Balsamum Judaicum, Syriacum, e Mecha.* Opobalsum, or balm of Gilead; a resinous juice, obtained from an evergreen tree, or shrub, (*amyrus Gileadensis Lin.*) growing spontaneously in Arabia. The best sort, which naturally exudes from the plant, is scarce known to Europe; and the inferior kinds, said to be extracted by lightly boiling the leaves and branches in water, are very rarely seen among us. The true opobalsam, according to Alpinus, is at first turbid and white; of a very strong pungent smell, like that of turpentine, but much sweeter; and of a bitter, acrid, astringent taste: upon being kept for some time, it becomes thin, limpid, light, of a greenish hue; then of a gold yellow; and at length of the colour of honey: after this it grows thick like turpentine, and loses much of its fragrance. This balsam is of great esteem in the eastern countries, both as a medicine, and as an odoriferous unguent and cosmetic. Its great scarcity has prevented its coming into use among us: in the mithridate and theriaca, which it is directed as an ingredient in, the London college allows the expressed oil of nutmegs as a succedaneum to it.

OPOPANAX [L.] Opopanax; a concrete gummy resinous juice, obtained from the roots of an umbell.

belliferous plant, (*Panax pastinace folis C. B. Pastinaca opopanax Lin.*) which grows spontaneously in the warmer countries, and bears the colds of this. The juice is brought from Turkey and the East Indies, sometimes in round drops or tears, but more commonly in irregular lumps, of a reddish yellow colour on the outside, with specks of white, inwardly of a paler colour, and frequently variegated with large white pieces. It has a peculiar strong smell, and a bitter, acrid, somewhat nauseous taste. Its virtues are those of an attenuating and aperient medicine. Boerhaave frequently employed it, along with ammoniacum and galbanum, in hypochondriacal disorders, obstructions of the abdominal viscera, and suppressions of the menstrual evacuations from a sluggishness of mucous humours, and a want of due elasticity of the solids: in these intentions it is an useful ingredient in the *pilula gummosæ* and compound powder of myrrh of the London pharmacopœia, but is not employed in any composition of the Edinburgh. It may be given by itself in the dose of a scruple, or half a dram: a whole dram proves, in many constitutions, gently purgative.

ORCHIS, vide SATYRION.

ORIGANI folia: *Origanum sylvestris, cunila bubula Plinii, C. B. Origanum vulgare Lin.* Wild marjoram; the leaves [*L.*]

This is met with upon dry chalky hills, and in gravelly soils, in several parts of England. It has an agreeable smell, and a pungent taste, warmer than that of the garden marjoram, and much resembling thyme, which it seems to agree with in virtue. An essential oil distilled from it, is kept in the shops.

There is another sort of *origanum*

called *Oreticum*, whose flowers, or rather flowery tops, are sometimes brought to us from Candy: these have an agreeable aromatic flavour, somewhat stronger than the common sort.

OROBİ semen: *Orobis siliquis articulatis, semine majore C. B.* Bitter vetch; the seeds.

This plant is cultivated, though not very often, in our gardens. The seeds have a farinaceous bitterish disagreeable taste: they stand recommended in nephritic complaints, but have long been strangers to practice.

ORYZÆ semen. Rice; the seeds, freed from the outward skin; these are brought chiefly from Carolina, where the plant is cultivated in large quantities. They are sufficiently nutritious, and afford an useful food in diarrhœas, dysenteries, and other disorders from a thin acrimonious state of the juices.

OSTEOCOLLA.

This is a fossil substance, found in many parts of Germany, as also in England, and other countries. It is generally met with in loose sandy grounds, spreading, from near the surface to a considerable depth, into a number of branches, like the roots of a tree: it has a whitish colour, rough on the surface, and for the most part either hollow within, or filled with solid wood, or a powdery woody matter. Sometimes the roots of living trees are found changed into this kind of substance. (See *Neumann's Chemical Works*, p. 11. and the *Berlin Memoirs* for the year 1748.)

This calcareous incrustation is found to consist of calcareous earth, some stony earth, volatile alkali, and vegetable matter. From this analysis we may easily judge of the virtue

virtue which this fossil is celebrated for, that of bringing on a callus in fractured bones.

OXALIS, vide ACETOSA.

OXYACANTHA GALENI,
vide BERBERIS.

OXYACANTHA VULGARIS,
vide SPINA ALBA.

OXYLAPATHUM, vide LAPATHUM.

PÆONIÆ radix, flores, semen : *Pæonia folio nigricante splendido, quæ mas C. B. vel Pæonia femina flore pleno rubro majore C. B. Pæonia officinalis Lin.* Male and female peony ; the roots, flowers, and seeds [L.]

These plants are cultivated in our gardens on account of the beauty of their flowers ; the female, which is the largest and most elegant, and for this reason the most common, is the only one which the shops are supplied with. In quality they are scarce sensibly different ; and hence the college allows them to be taken promiscuously. The roots and seeds of peony have, when recent, an unpleasing scent, approaching to that of the narcotic plants ; and a somewhat glutinous subacid taste, with a light degree of bitterness and astringency : the leaves also discover an astringent quality, both to the taste, and by changing chalybeate solutions of a purple colour : the flowers have little taste, and a very faint, not agreeable smell. The parts which have chiefly been used for medicinal purposes, are the roots and seeds. These are looked upon as emollient, corroborant, and lightly anodyne : and supposed to be of service in some kinds of obstructions, erosions of the viscera, heat of urine,

pains in the kidneys, and the like. The virtue they are chiefly celebrated for, is that of curing spasmodic and epileptic complaints ; which many have been absurd enough to believe that the root of this plant would do, by being only worn about the neck.

PALMÆ fructus, oleum expressum : *Palme foliorum pediculis spinosis, fructu pruniformi, luteo, oleoso Sloan.* The palm-tree, its fruit, and expressed oil [E].

This oil is obtained from the kernels of the fruit of a species of palm-tree, which is a native of the coast of Guinea and Cape Verd islands : from these places it has been transplanted into Jamaica and Barbadoes. The oil, as brought to us, is about the consistence of an ointment, and of an orange colour ; a strong, not disagreeable smell ; but very little taste : by long keeping, it loses its high colour, and becomes white, when it ought to be rejected, as no longer fit for use. The inhabitants of the Guinea coast are said to make this oil part of their food, and to employ it for the same purposes as we do butter. With us it is rarely given inwardly, and used only in some external applications, for pains and weakness of the nerves, cramps, sprains, and the like. The common people apply it to the cure of chilblains, and, when early made use of, not without success.

PANICI semen : *Panici Germanici, sive panicula minore C. B. Panici miliacei Lin.* Panic ; the seeds.

This plant is cultivated in some parts of Germany : the seeds have been made use of in food, but are not regarded as medicines.

PAPAVERIS ALBI capita : *Papaveris hortenensis semine albo C. B. Papaveris seminiferi Lin.* The large

garden poppy, with white flowers and seeds; or the white poppy; its heads [L. E.]

PAPAVER NIGRUM: *Papaver hortenſe nigro ſemine C. B.* The leſſer garden poppy, with purple flowers and black ſeeds; or the black poppy, a variety of the white.

The heads and ſtalks of theſe plants contain a milky juice; which may be collected in conſiderable quantity, by lightly wounding them when almoſt ripe: this juice, expoſed for a few days to the air, thickens into a ſtiff tenacious maſs, agreeing in quality with the opium brought from abroad. (See the article **OPIMUM**.) The juices of both the poppies appear to be ſimilar to one another; the only difference is in the quantity afforded, which is generally in proportion to the ſize of the plants: the larger, or white poppy, is the ſort cultivated by the preparers of opium in the eaſtern countries, and for medicinal uſes in this.

Poppy-heads, boiled in water, impart to the menſtrum their narcotic juice, together with the other juices which they have in common with vegetable matters in general. The liquor ſtrongly preſſed out, ſuffered to ſettle, clarified with whites of eggs, and evaporated to a due conſiſtence, yields about one-fifth, or one-fixth the weight of the heads, of extract. This poſſeſſes the virtues of opium; but requires to be given in double its doſe to answer the ſame intention, which it is ſaid to perform without occaſioning a nauſea and giddineſs, the uſual conſequences of the other. (See the *Edinburgh Eſſays abridg.* vol. i. pag. 158. and 132.) A ſtrong decoction of the heads, mixed with as much ſugar as is ſufficient to reduce it into the conſiſtence of a ſyrup, becomes fit for keeping in a liquid

form; and is the only official preparation of the poppy. Both theſe preparations are very uſeful ones, though liable to variation in point of ſtrength; nor does this inconvenience ſeem avoidable by any care in the preſcriber, or the operator; ſince the poppy-heads themſelves (according to the degree of maturity, and the ſoil and ſeaſon of which they are the produce) contain different proportions of the narcotic matter to the other juices of the plant; as has been obſerved in the *Pharmacopœia reſormata*.

The ſeeds of the poppy are by many reckoned ſoporific: Juncker ſays, they have the ſame quality with thoſe of hyoſeyamus, and Herman looks upon them as a good ſubſtitute to opium; miſled probably by an obſervation which holds in many plants, that the ſeeds are more efficacious than the veſſels in which they are contained.

The ſeeds of the poppy have nothing of the narcotic juice which is lodged in their covering, and in the ſtalks; an oil expreſſed from them has been uſed for the ſame purpoſes as oil olive; and the ſeeds themſelves taken as food; their taſte is ſweetiſh and farinaceous.

PAPAVERIS ERRATICI

ſeu Papaveris rhæados flores: Papaveris erratici majoris C. B. Papaveris rhæados Lin. Red poppy, or corn-rose; the greater of the hairy wild poppies, with deep red flowers and dark-coloured ſeeds; its flowers [L.]

The flowers of this plant yield upon expreſſion a deep red juice, and impart the ſame colour by infuſion to aqueous liquors. A ſyrup of them is kept in the ſhops; this is valued chiefly for its colour; though ſome expect from it a lightly anodyne virtue.

PARALYSIS *flores: Verbasculi pratensis odorati C. B. Primula veris majoris Raii. Primula veris officinalis Lin.* Cowslips; the flowers [L.]

This plant grows wild in marshes and moist meadows. The flowers appear in April; they have a pleasant sweet smell, and a subacid, bitterish, somewhat astringent taste. An infusion of them, used as tea, is recommended as a mild corroborant in nervous complaints, and in some female disorders proceeding from a deficiency of the menstrual purgations. A strong infusion of them forms, with a proper quantity of sugar, an agreeable syrup, which has long maintained a place in the shops: by boiling, even for a little time, their fine flavour is destroyed.

PAREIRA BRAVA.

This is the root of an American convolvulus (the *cissampelos pareira* Lin.) brought to us from Brazil, in pieces of different sizes, some no bigger than one's finger, others as large as a child's arm: it is crooked, and variously wrinkled on the surface; outwardly of a dark colour, internally of a dull yellowish, and interwoven with woody fibres; so that, upon a transverse section, a number of concentric circles appear, crossed with fibres, which run from the centre to the circumference: it has no smell; the taste is a little bitterish, blended with a sweetness, like that of liquorice. This root is highly extolled by the Brazilians and Portuguese, in a great variety of diseases, particularly against suppressions of urine, nephritic pains, and the calculus. In the two first, Geoffroy says he has given it with good success; and that the patient was almost instantly relieved by it, a copious discharge of urine succeeding. He likewise observed large

quantities of gravel, and even small stones, voided after its use: this effect he attributes not to any lithontriptic power, but to its dissolving the viscid mucus by which the fabulous matter had been detained. He likewise relates, that he has had frequent experience of the good effect of this root in deterging and healing ulcers of the kidneys and bladder, where the urine came away purulent and mucous, and could not be voided at all without extreme pain: by the use of the *pareira*, the urine soon became clear, and of a due consistence, and was evacuated freely; and by joining to this medicine balsam of Copaiba, the ulcer perfectly healed. The attenuating quality which he had discovered in this root, induced him to make trial of it in other diseases proceeding from tenacious juices, and in these likewise it fully answered his expectations: in humoral asthmas, where the lungs were stuffed up, and the patient almost suffocated by thick phlegm, an infusion of *pareira*, after many other medicines had proved ineffectual, occasioned a plentiful expectoration, and soon completed a cure: in the jaundice, proceeding from thick bile, it did excellent service: but in another icterical case, where the liver was swelled and hard, this medicine did no good. His dose of the root in substance is from twelve grains to half a dram, in decoction two or three drams.

PARIETARIÆ, seu Helxines, folia, herba: Parietaria officinarum C. B. et Lin. Pellitory of the wall; the leaves [L.], and herb [E.]

This is a small plant growing upon old walls; of an herbaceous subsaline taste, without any smell. It is one of the five emollient herbs, and in this intention is occasionally made use of. The expressed juice

has been given in the dose of three ounces as a diuretic.

PARTHENIUM, vide **MATRICARIA**.

PASTINACA HORTENSIS:
Pastinaca latifolia Raii & Lin.
Garden-parsnep.

PASTINACA SILVESTRIS:
Pastinaca sylvestris latifolia Raii.
Wild parsnep.

The roots of the garden-parsnep are used as food, and prove sufficiently nutritious. The seeds of both sorts are lightly aromatic; those of the wild are strongest.

PENTAPHYLLI radix, *Quinquifolii majoris repentis* C. B. *Potentillæ reptantis* Lin. Cinquefoil; the root [L.]

This grows plentifully in hedges, and by road sides. The root is moderately astringent; and as such is sometimes given internally against diarrhoeas and other fluxes, and employed in gargarisms for strengthening the gums, &c. The cortical part of the root may be taken, in substance, to the quantity of a dram: the internal part is considerably weaker, and requires to be given in double the dose to produce the same effect. It is scarcely otherwise made use of than as an ingredient in the theriaca.

PEPONUM semen: *Peponis oblongi* C. B. *Cucurbita peponis* Lin. The pumpkin; its seeds.

These seeds are very rarely met with in the shops: in quality they are not different from those of cucumbers, melons, and the others called cold seeds.

PERICLYMENUM, vide **CAPRIFOLIUM**.

PERSICARIÆ MITIS folia:
Persicariæ maculose Raii. *Polygon persicariæ* Lin. Spotted arsmart; the leaves.

This grows wild in moist watery places: the leaves somewhat resemble those of the *persica malus*, and have generally a blackish spot in the middle: their taste is roughish and subsaline. This herb is recommended chiefly for external purposes: Tournefort assures us (in the Memoirs of the French academy, 1703) that it is one of the best vulneraries and antiseptics he knows, and that a decoction of it in wine stops gangrenes in a surprising manner. The present practice, however, has no dependence on it.

PERSICARIÆ URENTIS folia: *Persicariæ vulgaris acris, sive hydropiperis* Raii; *Polygoni hydropiperis* Lin. Biting arsmart, lake-weed, or water-pepper; the leaves.

This sort is readily distinguishable from the former, by its pungent, biting, pepper-like taste. Its virtues are those of an acrid stimulating medicine: in phlegmatic habits, it promotes the urinary discharge, and has frequently done good service in scorbutic complaints. The fresh leaves are sometimes applied externally for cleansing old fistulous ulcers, and consuming fungous flesh: for these purposes they are said to be employed by the farriers, among whom they have been principally made use of.

PERSICÆ MALI flores: *Persica molli carne*, &c. C. B. *Amygdali persicæ* Lin. The peach-tree; its flowers.

Peach-flowers have an agreeable smell, and a bitterish taste: distilled, without any addition, by the heat of

of a water-bath, they yield one-sixth their weight, or more, of a whitish liquor, which, as Mr Bolduc observes, communicates to a large quantity of other liquids, a flavour like that of the kernels of fruits. An infusion in water of half an ounce of the fresh-gathered flowers, or a dram of them when dried, sweetened with sugar, proves for children an useful laxative and anthelmintic: the leaves of the tree are, in this intention, somewhat more efficacious, though less agreeable. The fruit has the same quality with the other sweet fruits, that of abating heat, quenching thirst, and gently loosening the belly.

PERUVIANUS cortex: Peruvian bark. 'The *cinchona officinalis* Lin. which furnishes this bark, is generally about fifteen feet high and six inches thick, somewhat resembles our cherry-tree, grows promiscuously in forests, particularly in the hilly parts of Quito in Peru, and is spontaneously propagated from its seeds.

'The bark has some odour, to most people not unpleasant, and very perceptible in the distilled water, in which floating globules, like essential oil, have been observed. Its taste is bitter and astringent, accompanied with a degree of pungency, and leaving a considerably lasting impression on the tongue.

'Two species are mentioned, viz. the coloured and the white. The coloured includes the pale, the red, the yellow, and the knotty; their bark being coloured, having the *cinchona* taste and smell, and the trees having very smooth leaves and purplish flowers. The white includes four varieties, their bark being of a whitish colour, with very little taste or smell, the trees having broad

hairy leaves, red, very fragrant flowers, with hairs on the inside.

'The proper red bark and one of the white kind have been found in the province of Santa Fé.

'The *Cinchona Caribbæa* Lin. *Cinchona Jamaicensis* Phil. *Trans.* vol. 77. p. 11. is called the sea-side beech in Jamaica, and grows from 20 to 40 feet high. The white, furrowed, thick outer bark is not used; the dark-brown inner bark has the common flavour, with a mixed kind of taste, at first of horse-radish and ginger, becoming at last bitter and astringent. It seems to give more extractive matter than the *cinchona officinalis*. Some of it was imported from St Lucia, in consequence of its having been used with advantage in the army and navy during the last war. The fresh bark is found to be considerably emetic and cathartic, which properties it is said to lose on drying.

'The pale and the red are chiefly in use. The pale is brought to us in pieces of different sizes, either flat or quilled, and the powder is rather paler than that of cinnamon. The red is generally in much larger, thicker, flattish pieces, but sometimes also in form of quills, and its powder is reddish like that of Armenian bole. It is much more resinous, and possesses the sensible qualities of the *cinchona* in a much higher degree than the other sorts; and the more nearly these resemble the red bark, the better they are now considered. The red bark is heavy, firm, sound, and dry; friable betwixt the teeth; does not separate into fibres; and breaks, not shivery, but short, close, and smooth. It has three layers: the outer is thin, rugged, of a reddish brown colour, but frequently covered with mossy matter: the middle is thicker, more compact, darker coloured, very resinous,

sinous, brittle, and yields first to the pestle: the inmost is more woody, fibrous, and of a brighter red.

'The Peruvian bark yields its virtues both to cold and boiling water; but the decoction is thicker, gives out its taste more readily, and forms an ink with a chalybeate more suddenly than the fresh cold infusion. This infusion, however, contains at least as much extractive matter, but more in a state of solution; and its colour, on standing some time with the chalybeate, becomes darker, while that of the decoction becomes more faint. When they are of a certain age, the addition of a chalybeate renders them green; and when this is the case, they are found to be in a state of fermentation, and effete. Mild or caustic alkalis or lime precipitate the extractive matter, which in the case of the caustic alkali is redissolved by a farther addition of the alkali. Lime-water precipitates less from a fresh infusion than from a fresh decoction; and in the precipitate of this last some mild earth is perceptible. The infusion is by age reduced to the same state with the fresh decoction, and then they deposite nearly an equal quantity of mild earth and extractive matter; so that lime-water, as well as a chalybeate, may be used as a test of the relative strength and perishable nature of the different preparations, and of different barks. Accordingly cold infusions are found by experiments to be less perishable than decoctions; infusions and decoctions of the red bark, than those of the pale; those of the red bark, however, are found by length of time to separate more mild earth with the lime-water, and more extracted matter. Lime-water, as precipitating the extracted matter, ap-

pears an equally improper and disagreeable menstruum.

'Water is found to suspend the resin by means of much less gum than has been supposed. Rectified spirit of wine extracts a bitterness, but no astringency, from a residuum of twenty-two affusions of cold water; and water extracts astringency, but no bitterness, from the residuum of many affusions of rectified spirit. The residua in both are insipid.

'The menstrua, as to power, are in the following order.

Dulcified spirit of vitriol.

Caustic ley.

French brandy.

Rhenish wine.

Soft water.

Vinegar and water.

Dulcified spirit of nitre.

Mild volatile alkali.

Rectified spirit of wine.

Mild vegetable alkali.

Lime water.

'The antiseptic powers of vinegar and bark united are double the sum of those taken separately. The astringent power of the bark is increased by acid of vitriol, the bitter taste is destroyed by it *.

'The officinal preparations of the bark are,

'1. The powder: of this, the first parcel that passes the sieve being the most resinous and brittle layer, is the strongest.

'2. The extract [*E.*]: the watery and spirituous extracts conjoined form the properest preparations of this kind.

'3. The resin: this cannot perhaps be obtained separate from the gummy part, nor would it be desirable.

'4. Spirituous tincture [*L. E.*]: this is best made with proof-spirit.

'Tincture in volatile spirit [*L.*].

'The best form is that of powder; in

* See Irving's Prize-Dissertation on the Bark.

in which the constituent parts are in the most effectual proportion. The cold infusion, which can be made in a few minutes by agitation, the spirituous tincture, and the extract, are likewise proper in this respect. For conveying the taste, different patients require different vehicles, liquorice, aromatics, acids, port-wine, small-beer, porter, milk, butter-milk, &c. or it may be given in form of electuary with currant-jelly, or with brandy or rum.

According to some, the Peruvians learned the use of the bark by observing certain animals affected with intermittents instinctively led to it; while others say, that a Peruvian having an ague, was cured by happening to drink of a pool, which, from some trees having fallen into it, tasted of cinchona; and its use in gangrene is said to have originated from its curing one in an aguish patient. About the year 1640, the lady of the Spanish viceroy, the Comitissa del Cinchon, was cured by the bark, which has therefore been called Cortex or Pulvis Comitissæ, Cinchona, Chinachina or Chinchina, Kinakina or Kinkina, Quinaquina or Quinquina; and from the interest which the Cardinal de Lugo and the Jesuit fathers took in its distribution, it has been called Cortex or Pulvis Cardinalis de Lugo, Jesuiticus, Patrum, &c.

On its first introduction into Europe, it was reprobated by many eminent physicians; and at different periods long after, it was considered a dangerous remedy; but its character, in process of time, became very universally established. From its sensible qualities, and its utility in various states of debility, it is no longer considered as acting primarily on the fluids, or as a specific, but a tonic; and, chiefly from its tonic power, an antiseptic. It has not yet been well imitated by art.

The only contraindications to its use seem to be an active inflammatory state of the system and rigidity of fibre.

In intermittents, some prefer giving it just before the fit, some during the fit, others immediately after it. Some, again, order it in the quantity of an ounce, between the fits; the dose being the more frequent and larger according to the frequency of the fits; or, as the chief danger seems to be in giving too little, the quantity may be as great as the stomach will bear. The requisite quantity is very different in different cases; and in many vernal agues it seems even hardly necessary.

It often pukes or purges, sometimes oppresses the stomach; and frequently, even when retained, it seems to require the assistance of something more suddenly and completely invigorating, as wine, opium, aromatics, &c. by which also the sweating is accelerated, and less bark is found necessary to the cure. It is now given from the very commencement of the disease, without previous evacuations, which, with the delay of the bark, or under doses of it, by retarding the cure, often seem to induce abdominal inflammation, scirrhus, jaundice, hectic, dropsy, &c. symptoms formerly imputed to the premature or imtemperate use of the bark, but which are best obviated by its early and large use. It is continued not only till the paroxysms cease, but till the natural appetite, strength, and complexion return. Its use is then gradually left off, and repeated at proper intervals to secure against a relapse; to which, however unaccountable, independently of the recovery of vigour, there often seems to be a peculiar disposition.

Some think its efficacy increased by the addition of an aromatic and sal ammoniac.

It

‘ It is a medicine which seems not only suited to formed and latent intermittents, but to that state of fibre on which all rigidly periodical diseases seem to depend; as periodical pain, inflammation, hemorrhagy, spasm, cough, loss of external sense, &c.

‘ Bark is now used by some in all continued fevers: at the same time attention is paid to keep the bowels clean, and to promote when necessary the evacuation of redundant bile, always, however, so as to weaken, in cases of debility, as little as possible.

‘ In confluent small pox, it promotes languid eruption and suppuration, diminishes the fever thro’ the whole course of it, and prevents or corrects putrescence and gangrene.

‘ In gangrenous sore throats it is much used, as it is externally and internally in every species of gangrene. In some cases indeed, particularly in those farthest removed from the source of life, as in the feet, it seems to require the aid of something more diffusive, and sometimes even opium alone.

‘ In contagious dysentery, after due evacuation, it has been used by the mouth, and by injection with and without opium.

‘ In all those hemorrhagies called passive, and which it is allowed all are very apt to become, and in other increased discharges, it is much used; and in certain undefined cases of hæmoptysis, some allege that it is remarkably effectual when joined with an absorbent.

‘ It is used for obviating the disposition to nervous and convulsive diseases; and some have great confidence in it joined with the acid of vitriol, and, notwithstanding the latter, a milk diet, in cases of phthisis, scrophula, ill-conditioned ulcers, rickets, scurvy, and in states of convalescence.

‘ In dropsy, not depending on lo-

cal affection, it is often alternated or conjoined with diuretics; and in venereal cases, with mercury.

PETASITIDIS *radix: Petasitidis majoris et vulgaris C. B. Tussilaginis pitusitidis Lin.* Butterbur; the root.

This grows wild by the sides of ditches and in meadows: it sends forth short scaly stalks in the spring, bearing spikes of purplish flowers; after this the leaves appear, which are very large and hollowed in about the middle, so as to resemble a bonnet, or what the Greeks called *πετασος*, whence the name of the plant. The roots have a strong smell; a bitterish, aromatic, not very agreeable taste; they have been given in the dose of a dram or more, as an aromatic, and likewise as an aperient and deobstruent; these virtues, however, they possess in so low a degree, as to have lost their reputation in the shops.

PETROLEUM, Rock-oil.

This is a general name for sundry liquid bitumens, or mineral oils, which spontaneously exude from the earth, or from clefts of rocks. These oils are found in almost all countries, but in greatest quantities in the warmer ones: some are met with in different parts of England; and many of our common bituminous minerals, as pitcoal, &c. afford, on distillation, oils not greatly different from them.

The finest sort of this commodity comes from the duchy of Modena in Italy, where three different kinds are found; the best is almost as clear, fluid, and transparent as water, of a highly penetrating, yet not disagreeable smell, somewhat like that of rectified oil of amber: the second sort is of a clear yellow colour, not so fluid as the former, less penetrating, and partaking more of the

the oil of amber smell: the third, or worst, is of a blackish red colour, of a thicker consistence, and more disagreeable than the two foregoing. The first of these is very rarely met with in the shops; the second, mixed with a little of the third and some subtle oil, is usually sent us instead of it. Petroleum readily catches fire, and, if pure, burns entirely away: distilled, it becomes somewhat more pellucid than before (a small quantity of yellowish matter remaining), and loses greatly of its natural smell: it unites with the essential oils of vegetables, not at all with vinous spirits: the finer sorts are so light as to swim upon the most highly rectified spirit of wine.

Petroleum is at present very rarely employed as a medicine, though if the finer kinds could be procured genuine, they should seem to deserve some notice: they are more agreeable than the oil of amber, and milder than that of turpentine; the virtues of both which they participate of. They are principally recommended by authors for external purposes, against pains and aches, in paralytic complaints, and for preventing chilblains. For these intentions, some of the more common mineral oils have been made use of with good success; an oil extracted from a kind of stone-coal has been cried up among the common people, under the name of British oil, for rheumatic pains, &c. even this is often counterfeited by a small portion of oil of amber added to the common expressed oils.

PETROLEUM BARBADENSE [L. E.] Barbadoes tar.

This is thicker than the foregoing petrolea, and nearly of the consistence of common tar. It is of a reddish black colour, a disagreeable smell, less pungent than the

other sorts. This bitumen is found in several of our American islands, where it is esteemed by the inhabitants of great service as a sudorific, and in disorders of the breast and lungs; though in cases of this kind, attended with inflammation, it is certainly improper: they likewise apply it externally as a discutient, and for preventing paralytic disorders. Among us it is rarely used, and not often to be met with genuine. The London college employs it as a menstruum for sulphur in the *balsamum sulphuris Barbadosense*, and directs an oil to be distilled from it.

PETROSELINI MACEDONICI *semen: Apii Macedonici C. B. Bubonis Macedonici Lin.* Macedonian parsley; the seeds [L.]

PETROSELINIVULGARIS *semen, radix: Apii hortensis seu petroselinii vulgo C. B. Apii petroselinii Lin.* Common parsley; the roots [E.], and seeds [L.]

The first of these plants is sometimes met with in our gardens; the second is commonly cultivated for culinary purposes. The seeds of both have an aromatic flavour, and are occasionally made use of as carminatives, &c. Those of the Macedonian parsley are the strongest, though generally supplied by the other. The root of parsley is one of the five aperient roots, and in this intention is sometimes made an ingredient in apozems and diet-drinks: if liberally used, it is apt to occasion flatulencies; and thus, by distending the viscera, produces a contrary effect to that intended by it: the taste of this root is somewhat sweetish, with a light degree of warmth and aromatic flavour. The seeds of the Macedonian parsley are an ingredient in mithridate
and

and theriaca; and those of the common in the electuary of bay-berries. [L.]

PEUCEDANI radix: *Peucedani Germanici C. B. Peucedani officinalis Lin.* Hog's fennel, or sulphurwort; the root.

This plant grows wild by the sea shores, and in moist shady places. The roots have a strong disagreeable smell, somewhat resembling that of sulphureous solutions; and an unctuous, subacid, bitterish taste. They are looked upon as stimulating and attenuating, and supposed to promote expectoration and urine: the expressed juice was employed by the ancients as an errhine in lethargic disorders. The present practice pays no regard to them in any intention.

PHU, vide **VALERIANA SYLVESTRIS.**

PILOSELLA, vide **AURICULA MURIS.**

PIMENTA, vide **PIPER JAMAICENSE.**

PIMPINELLÆ SANGUISORBÆ *folia: Pimpinella sanguisorbæ minoris hirsuta et levis C. B.* Burnet; the leaves.

This grows wild upon dry chalky hills: such as is cultivated in gardens, though preferred by some, is inferior in quality to the wild sort. The leaves are mildly astringent, and have been sometimes employed in this intention in dysenteries and hemorrhagies.

PIMPINELLÆ SAXIFRAGÆ *radix: Pimpinella saxifraga Lin.* Burnet-saxifrage; the root [L. E.]

Three varieties of this plant are taken notice of by medical writers.

1. *Pimpinella saxifraga major, umbella candida C. B.* This is the species celebrated by the German writers under the name of *pimpinella alba*: it is not very common in this country, and therefore our markets have been generally supplied with the following.

2. *Pimpinella saxifraga minor foliis sanguisorbæ Raii. Tragonolisenum alterum majus Tourn.* This is not unfrequently met with in dry pasture-grounds.

3. *Pimpinella saxifraga minor C. B. foliis. dissectis Hist. Oxon.* This sort is the most common in the fields about London: it grows taller than the others, but the leaves are less.

All these plants seem to be possessed of the same qualities, and to differ only in external appearance; and even in this, their difference is so inconsiderable, that Linnæus has joined them into one, under the general name of *pimpinella*. The London college, instead of the first, which has been generally understood as the officinal sort, allow either of the others (which are more common) to be used promiscuously.

The roots of *pimpinella* have a grateful, warm, very pungent taste, which is entirely extracted by rectified spirit: in distillation, the menstruum arises, leaving all that it had taken up from the root, united into a pungent aromatic resin. This root promises, from its sensible qualities, to be a medicine of considerable utility; though little regarded in common practice: the only officinal composition in which it is an ingredient is the *pukis ari compositur* [L.] Stahl, Hoffman, and other German physicians, are extremely fond of it, and recommend it as an excellent stomachic, resolvent, detergent, diuretic, diaphoretic, and alexipharmac. They frequently gave it, and not without suc-

success, in scorbutic and cutaneous disorders, foulness of the blood and juices, tumours and obstructions of the glands, and diseases proceeding from a deficiency of the fluid secretions in general. Boerhaave directs the use of this medicine in asthmatic and hydropic cases, where the strongest resolvents are indicated: the form he prefers is a watery infusion; but the spirituous tincture possesses the virtues of the root in much greater perfection.

There is another species of pimperella called *nigra*, from its root being externally of a bright black colour, whilst those of the foregoing sorts are whitish: this is remarkable for its yielding an essential oil of a blue colour. It grows wild in some parts of Germany, Switzerland, &c. and is sown and then met with in our gardens.

PINUS *nucis et resina: Pinus sativa C. B. et Pinus sylvestris C. B. et Lin.* Pine-tree; the kernels of its fruit or cones, and its resin [E.]

The pine differs from the firs in having its leaves standing in pairs, those of the firs being solitary. The pine abounds with the same kind of resinous juice as the fir-trees (see the articles *Terebinthina* and *Thus vulgare*.) The kernels have a very pleasant sweet taste, and appear to be nearly of the same quality with sweet almonds; they are considered rather as dietetic than medicinal articles.

PIPERIS NIGRI *Lin. fructus: [L. E.]* Black pepper; the fruit of a plant growing in Java, Malabar, &c. gathered probably before it is fully ripe, and excicated in the sun. This is the only spice which we import directly from the East-Indies, all the others coming through the hands of the Dutch.

PIPER ALBUM [L.] White pepper; the fruit of the black pepper plant gathered when ripe, and decorticated by maceration in water. The grains, as brought to us, have sometimes pieces of a dark coloured skin still upon them.

PIPERIS LONGI *Lin. fructus: [L. E.]* Long pepper. This is the fruit of a different plant, growing also in the East-Indies. It is of a cylindrical figure, about an inch and a half in length; the external surface appears composed of numerous minute grains disposed round the fruit in a kind of spiral direction.

All these spices have a pungent smell, and a very hot biting taste. The long sort, which is the hottest and strongest, is most frequently made use of for medicinal purposes; the black, as being more grateful, for culinary ones; the white, which is the weakest of the three, is rarely employed for either. The warmth and pungency of these spices reside chiefly in their resinous part; their aromatic odour in an essential oil. The genuine distilled oil smells strong of the pepper, but has very little acrimony; the remaining decoction inspissated, yields an extract considerably pungent. A tincture made in rectified spirit is extremely hot and fiery; a few drops of it set the mouth as it were in a flame.

The white pepper is an ingredient in philonium and mithridate; the black, in the pulvis antilyssus, electary of bayberries, confectio Paulina, and theriaca; the long, in the bitter wine, aromatic tincture, powder and pills, the compound powders of bole and scordium, the confectio Paulina, mithridate, and theriaca [L.]

PIPER JAMAICENSE: Fructus myrtipimentæ *Lin. [L. E.]* Pimento,

ments, or Jamaica pepper; the *animum* of many of the German writers.

This is the produce of our own plantations; it is the fruit of a large tree growing spontaneously in the mountainous parts of Jamaica, called by Sir Hans Sloan, *myrtus arborea aromatica, foliis laurinis*. The smell of this spice resembles a mixture of cinnamon, cloves, and nutmegs: its taste approaches to that of cloves, or a mixture of the three foregoing; whence it has received the name of *all-spice*. The shops have been for some time accustomed to employ this aromatic as a succedaneum to the more costly spices, and from them it has been introduced into our hospitals: the London college have given it a place in their late dispensatory, and direct a simple water to be distilled from it, which possesses the flavour of the pimento in great perfection. It yields a large quantity of a pleasant essential oil, which sinks in water: this oil, recommended in the Pharmacopœia reformata, is now received into the Edinburgh pharmacopœia. Rectified spirit extracts its pungency and flavour, and elevates nothing in distillation.

PIPER INDICUM: *Capficum filiquis longis propendentibus Tourn. Capficum annuum Lin.* Guinea-pepper, or capficum; the fruit [E.]

This is an annual plant cultivated in our gardens; it ripens its red pods in September or October. The taste of capficum is extremely pungent and acrimonious, setting the mouth as it were on fire. It is rarely made use of in medicine, being chiefly employed for culinary purposes: a species of it called in the West-Indies *bird-pepper*, is the basis of a powder brought us from thence under the name of *Cayan pepper*.

PISUM: *Pisum arvense flore candido, fructu rotundo albo C. B.* Peas; the seeds.

These are commonly used in food, but very rarely for medicinal purposes.

PIX LIQUIDA. *Pinus silvestris et pinus abies Lin. [L.E.]* Tar; a thick, black, unctuous substance, obtained from old pines and fir-trees, by burning them with a close smothering heat. It differs from the native resinous juice of the trees (see *Terebinthina*) in having received a disagreeable impression from the fire, and containing a portion of the saline and other juices united with the resinous and oily; by the mediation of these, a part of the terebinthinate oil proves dissoluble in aqueous liquors, which extract little or nothing from the purer turpentine. Water impregnated with the more soluble parts of tar, proves, in consequence of this hot pungent oil, warm and stimulating: it sensibly raises the pulse and quickens the circulation: by these qualities, in cold languid phlegmatic habits, it strengthens the solids, attenuates viscid juices, opens obstructions of the minuter vessels, and promotes perspiration and the fluid secretions in general; whilst in hot bilious temperaments, it disposes to inflammation, and aggravates the complaints which it has been employed to remove.

PIX ARIDA [L.] Dry or stone pitch.

This is the *pix liquida* exsiccated by heat: in this process, a part of the acid and the more volatile oil are dissipated along with the aqueous moisture: and hence the product proves considerably less active. It is made use of only in external applications, as a warm adhesive resinous substance.

PIX

PIX NAVALIS. This is generally allowed to be the same with the foregoing dry pitch or inspissated tar. According to Geoffroy, it is compounded of a strange mixture of tallow, and tar, and palimpissa, and an artificial black pitch; which artificial pitch is itself composed of tar and palimpissa; and this palimpissa is no other than an inspissated tar: so that notwithstanding this show of composition, the result is only a mixture of pitch with a little tallow.

PIX BURGUNDICA. *Pinus abies* Lin. [L. E.] Burgundy pitch. This is of a solid consistence, yet somewhat soft, of a reddish brown colour, and more agreeable in smell than either of the foregoing. Geoffroy relates, that it is composed of gallipot (a solid whitish-resin which separates from some of the *terebinthina* as they run from the tree) melted with common turpentine and a little of its distilled oil. Dale informs us, from the relation of a gentleman who saw the preparation of this commodity in Saxony, (from whence we are chiefly supplied with it), that it is no more than the common turpentine boiled a little.

All these substances are employed in the shops only in external compositions. The dry pitch and Burgundy pitch are ingredients in several plasters, ointments, and cerates: and tar gives name to one of the ointments.

PLANTAGINIS folia: *Plantaginis latifolia* ♀ uatæ C. B. *Plantaginis majoris* Lin. Common great water plantane; the leaves [E.] It is called *septinervia*, from its having seven large nerves or ribs running along each leaf; the narrow-leaved sort has only five ribs, and hence it

is named *quinquenervia*: they are both common in fields and by roadsides. The leaves are lightly astringent, and the seeds said to be so; and hence they stand recommended in hemorrhagies, and other cases where medicines of this kind are proper. The leaves bruised a little, are the usual application of the common people to slight flesh wounds.

PLUMBUM [L.] Lead.

This is the heaviest of the metals except gold: it melts in a moderate heat, and if kept in fusion, is soon converted partly into fume, and partly into an ash-coloured calx (*plumbum ustum*); this exposed to a stronger fire, in such a manner that the flame may play upon its surface, becomes first yellow, and afterwards of a deep red (*minium* or red lead): if in this process the fire be suddenly raised to a considerable height, the calx melts, assumes the appearance of oil, and on cooling forms a soft leafy substance of a yellowish or reddish colour (*litharge*). The proper menstruum of this metal is aquafortis: the vegetable acids likewise dissolve it, but in very small quantity: a quart of distilled vinegar will not take up a dram; exposed to the steam of vinegar, it is by degrees corroded into a white powder (*cerusse*) which is considerably more easy of solution. The calces of lead dissolve by heat, in expressed oils; these mixtures are the basis of several officinal plasters and unguents. Crystals of this metal made with distilled vinegar (called, from their sweetish taste, *sugar of lead*), and a tincture drawn from these and green vitriol, are likewise kept in the shops.

Preparations of lead, given internally, are supposed to incrassate the fluids, abate inflammations, and re-

strain venereal desires. The sugar is a strong astringent, and has been used, it is said, with good success in hæmorrhagies, the fluor albus, feminal gleet, &c. The tincture is recommended for the like purposes; and for checking immoderate sweats in phthical cases; whence it has been usually called *tinctura antiphthifica*. The internal use of this metal is nevertheless full of danger, and ought never to be ventured upon unless in desperate cases, after other medicines have been employed without taking effect: it often occasions violent colics; and though it should not prove immediately hurtful, its ill consequences are sure, though slow: tremors, spasms, or lingering tabes, too frequently follow.

‘The preparations of lead with vinegar are much used externally in inflammations.’

POLII, *seu Polii montani, summitates*. Poley mountain; the tops [L.]

It has been disputed among botanic writers, what species of polley ought to be employed in medicine. The London college allows the promiscuous use of two; the *Polium maritimum erectum Monspeliacum C. B.* (*Teucrium capitatum Lin.*), and the *Polium angustifolium Creticum C. B.* (*Teucrium Creticum Lin.*) The first is sometimes cultivated in our gardens, and is the sort which the shops have been generally supplied with. They have both a light aromatic smell, and a bitterish taste; that brought from Crete is the most agreeable. They stand recommended in catarrhs, uterine disorders, &c. but at present are scarce otherwise made use of than as an ingredient in the mithridate and theriaca.

POLYGONATUM, vide **SIGILLUM SOLOMONIS**.

POLYGONUM, vide **CENTINODIUM**.

POLYPODII radix: *Filicis polypodii dictæ Herm. Polypodii vulgaris Lin.* Polypody; the root. [E.]

Polypody is a capillary plant, growing upon old walls, the trunks of decayed trees, &c. That found upon the oak is generally preferred, though not sensibly different from the others. The roots are long and slender, of a reddish brown colour on the outside, greenish within, full of small tubercles, which are resembled to the feet of an insect; whence the name of the plant: the taste of these roots is sweetish and nauseous.

Polypody has been employed in medicine for many ages; nevertheless its virtues remain as yet to be determined. The ancients held it to be a powerful purger of melancholic humours; by degrees, it came to be looked upon as an evacuator of all humours in general: at length it was supposed only to gently loosen the belly; and afterwards even this quality was denied it: succeeding physicians declared it to be astringent; of this number is Boerhaave, who esteems it moderately styptic and antiscorbutic. For our own part we have had no direct experience of it, nor is it employed in practice; it is probable that (as Juncker supposes) the fresh root may loosen the belly, and that it has not this effect when dry.

POLYTRICHUM, vide **TRICHOMANES**.

POMPHOLYX: A calx, or flowers, of zinc, produced in the furnaces where copper is made into brass by calamine the ore of zinc. It is found adhering to the covers of the crucibles, &c. either in form of thin crusts, or of a light downy matter,

ter, generally of a pure white colour, tho' sometimes yellowish. See ZINCUM.

POPULI NIGRÆ *gemmæ*: *Populi nigrae C. B. et Lin.* The black poplar; its buds.

The black poplar is a large tree, growing wild in watery places; it is easily raised, and very quick of growth. The young buds or rudiments of the leaves, which appear in the beginning of spring, abound with a yellow, unctuous, odorous juice. They have hitherto been employed chiefly in an ointment, which received its name from them; tho' they are certainly capable of being applied to other purposes: a tincture of them made in rectified spirit yields upon being inspissated a fragrant resin superior to many of those brought from abroad.

PORRI radix: *Porri communis capitati C. B. Allii porri Lin.* Leeks; the root.

This participates of the virtues of garlic, from which it differs chiefly in being much weaker. See the article ALLIUM.

PORTULACÆ *semen*: *Portulacæ hortenſis latifolia J. B. Portulacæ oleraceæ Lin.* Purslane; the seeds.

This herb is cultivated in gardens for culinary uses. The seeds are ranked among the lesser cold seeds, and have sometimes been employed in emulsions, and the like, along with the others of that class.

POTENTILLA, vide ARGENTINA.

PRASIUM, vide MARRUBIUM.

PRIMULÆ VERIS *folia, radix*: *Primulæ veris pallido flore humilis Tourn. Primulæ veris acaulis*

Lin. Primrose; the herb and root.

This is a low plant, growing wild in woods and hedges, and producing pale yellow flowers in the spring. The leaves have an herbaceous taste. The roots are lightly bitter, with a kind of aromatic flavour, which some resemble to that of aniseeds; their expressed juice, purified by settling, is sometimes used as a sterminatory. The flowers have an agreeable flavour, but very weak: an infusion of them in wine, and a spirit distilled from them, are employed in some places as cordial and nervine.

PRUNELLÆ, *ſeu Brunellæ, folia*: *Prunellæ majoris foliis non difſectis C. B. Prunellæ vulgaris Lin.* Self-heal; the leaves.

This plant grows wild in meadows and pasture grounds, and produces thick spikes of purplish flowers during the latter part of the summer. It has an herbaceous roughish taste: and hence stands recommended in hæmorrhagies and alvine fluxes: it has been principally celebrated as a vulnerary, whence its name; and in gargarisms for apthæ, and inflammations of the fauces.

PRUNI HORTENSIS *fructus*: *Pruni domesticæ Lin.* The plum tree. Three sorts of plums are looked upon as articles of the materia medica. They are all met with in our gardens, but the shops are supplied with the fruit moderately dried from abroad.

PRUNA BRIGNOLENSIA: *Pruna ex flavo ruſcentia, mixti ſaporis gratiſſima C. B.* The Brignole plum, brought from Provence under the name of prunelloes.

PRUNA GALLICA: *Fructus Pruni fructu parvo, dulci, atro-cæruleo Tourn.* French or common

mon prunes [L.] This is the plum called by our gardeners the little black damask.

PRUNA DAMASCENA : *Fructus Pruni fructu magno, dulci, atro-ceruleo* Tourn. Damascene plums or damsons. This is the sort called the great damask violet of Tours. It is seldom met with dry in the shops, and is generally supplied by the common prune.

The medical effects of the damson and common prunes are, to abate heat, and gently loosen the belly: which they perform by lubricating the passage, and softening the excrement. They are of considerable service in costiveness, accompanied with heat or irritation, which the more stimulating cathartics would tend to aggravate: where prunes are not of themselves sufficient, their effects may be promoted by joining with them a little rhubarb or the like; to which may be added some carminative ingredient to prevent their occasioning flatulencies. Prunelloes have scarce any laxative quality: these are mild grateful refrigerants, and by being occasionally kept in the mouth, usefully allay the thirst of hydropic persons.

PRUNA SILVESTRIA: *Fructus pruni silvestris* C. B. *Pruni spinosa* Lin. Sloes; the fruit of the common black thorn, or sloe bush [L.]

These have a very rough, austere taste, especially before they have been mellowed by frosts. The juice of the unripe fruit, inspissated to a proper consistence, is called *acacia Germanica*, and usually sold in the shops for the true Egyptian acacia: it is equally astringent with the Egyptian sort; but has more of a sharp or tartish taste, without any thing of the sweetish relish of the other.

A conserve of the fruit is directed by the London college.

PSYLLII semen: *Psyllii majoris erecti* C. B. *Plantaginis psyllii* Lin. Fleawort; the seeds.

This is a sort of plantane, growing wild in the warmer climates, and sometimes met with in our gardens: it differs from the common plantanes in having its stalks branched, with leaves upon them; hence it is named by Ray *plantago caulifera*. The seeds have been usually brought from the south of France; they are small, but supposed to resemble in shape a flea, whence the English name of the plant. These seeds have a nauseous, mucilaginous taste: boiled in water, they yield a considerable quantity of mucilage, which is sometimes made use of in emollient glysters and the like. Alpinus relates, that among the Egyptians this mucilage is given in ardent fevers, and that it generally either loosens the belly or promotes sweat.

PTARMICÆ radix: *Dracunculi pratensis, serrato folio* C. B. *Achillea ptarmicæ* Lin. Sneezewort, or bastard pellitory; the root.

This grows wild upon heaths and in moist shady places; the flowers, which are of a white colour, come forth in June and July. The roots have an acrid smell, and a hot biting taste: chewed they occasion a plentiful discharge of saliva; and when powdered and snuffed up the nose, provoke sneezing. These are the only intentions to which they have been usually applied.

PULEGII folia, herba: *Pulegii latifolii* C. B. *Mentha aquatica seu pulegii vulgaris* Tourn. *Mentha pulegii* Lin. Pennyroyal; the leaves [L.], herb [E.]

This plant grows spontaneously in several parts of England upon moist

moist commons, and in watery places; trailing upon the ground, and striking roots at the joints. Our markets have been for some time supplied with a garden sort, which is larger than the other, and grows upright: this is called by Mr Dale *pulegium erectum*.

Pennyroyal is a warm, pungent herb, of the aromatic kind, similar to mint, but more acrid and less agreeable: it has long been held in great esteem, and not undeservedly, as an aperient and deobstruent, particularly in hysteric complaints, and suppressions of the uterine purgations. For these purposes, the distilled water is generally made use of, or, what is of equal efficacy, an infusion of the leaves. It is observable, that both water and rectified spirit extract the virtues of this herb by infusion, and likewise elevate the greatest part of them in distillation.

In the shops are kept a simple [L. E.] and spirituous water, and essential oil [L.], and its simple water for making the lac ammoniaci [L.]

PULEGII CERVINI folia: *Pulegii angustifolii* C. B. *Mentha cervina* Lin. Harts pennyroyal; the leaves.

This species is met with, though not very often, in our gardens. It is somewhat stronger, yet rather more agreeable, than the foregoing, both in taste and smell.

PULMONARIÆ MACULOSÆ folia: *Pulmonaria Italarum ad buglossam accidentis* J. B. *Pulmonaria officinalis* Lin. Spotted lungwort, or sage of Jerusalem; the leaves.

This is met with in gardens: the leaves are of a green colour spotted with white; of an herbaceous somewhat mucilaginous taste, without

any smell. They stand recommended against ulcers of the lungs, phthises, and other like disorders: nevertheless experience gives little countenance to these virtues, nor does the present practice expect them.

PULSATILLÆ NIGRICANTIS herba cum floribus. *Pulsatilla flore minore nigricante* C. B. *Anemones pratensis* Lin. Meadow anemone; the herb and flowers.

This is the most acrid of the anemonies; and is recommended by Stork, in the quantity of half an ounce of the distilled water, or five grains of the extract, twice or thrice a-day in venereal nodes, pains, ulcers with caries, chronic eruptions, amenorrhœa, various chronic affections of the eye, particularly blindness from obscurities of the cornea. Its common effects are nausea or vomiting, an augmented discharge of urine, diarrhœa, and increased pain at first in the affected part.

PYRETHRI radix: *Pyrethri flore bellidis* C. B. *Anthemitis pyrethri* Lin. Pellitory of Spain; the root [L. E.]

This plant, though a native of the warm climates, bears the ordinary winters of this, and often flowers successively from Christmas to May; the roots also grow larger with us than those which the shops are usually supplied with from abroad.

Pellitory root has no sensible smell; its taste is very hot and acrid, but less so than that of arum or dracunculus: the juice expressed from it has scarce any acrimony, nor is the root itself so pungent when fresh as after it has been dried. Water, assisted by heat, extracts some share of its taste; rectified spirit, the whole; neither of them elevate any thing in distillation. The

principal use of pyrethrum in the present practice is as a masticatory, for promoting the salival flux, and evacuating viscid humours from the head and neighbouring parts: by this means it often relieves the toothach, some kinds of pains of the head, and lethargic complaints.

‘QUASSIÆ LIGNUM: *Quassia amara* Lin. Quassy root; the wood [E.]

‘This root is about the thickness of a man’s arm; its wood is whitish, becoming yellowish by exposure to the air. It has a thin, grey, fissured brittle bark, which is deemed in Surinam more powerful than the wood. Quassy has no sensible odour, but is one of the most intense, durable, pure bitters known. Its infusion, decoction, and tincture, are almost equally bitter and yellowish, and not blackened by a chalybeate.

‘It was much used in a fatal fever in Surinam, and is said to be effectual in suppressing vomiting.

‘It is said to be less antiseptic than Peruvian bark; but, like colombo, another pure bitter, it preserves bile longer from putrefaction. The best form is that of pills of the extract.’

QUERCUS cortex: *Quercus cum longis pediculis* C. B. *Quercus roboris* Lin. Oak tree; the bark [E.]

This bark is a strong astringent; and hence stands recommended in hæmorrhagies, alvine fluxes, and other preternatural or immoderate secretions.

‘RADIX INDICA LOPEZIANA [L.] *Radix Indica a Joanne Lopez denominata, Gaubii Adversaria*, cap. 6. Indian or Lopez root. The tree is unknown. Neither the woody nor cortical part of the root has any remarkable sensible quality. A slight bitterishness is perceptible,

and it is recommended, like simarouba, in diarrhoeas even of the colliquative kind, in half-dram doses four times a-day.’

RANARUM SPERMA: Frogs spawn. This has been celebrated as an excellent cooler for external purposes; but practitioners have not experienced from it any peculiar effects that could deserve its being continued in use, and both the London and Edinburgh colleges have now discarded it.

RAPHANI RUSTICANI *radix: Raphani rusticani* C. B. *Cochlearia folio cubitali* Tourn. *Cochlearia Armoracia* Lin. Horse radish; the root [L. E.]

This plant is sometimes found wild about river-sides, and other moist places; for medicinal and culinary uses, it is cultivated in gardens; it flowers in June, but rarely perfects its seeds in this country. Horse-radish roots has a quick pungent smell, and a penetrating acrid taste; it nevertheless contains in certain vessels a sweet juice, which sometimes exudes upon the surface. By drying, it loses all its acrimony, becoming first sweetish, and afterwards almost insipid: if kept in a cool place, covered with sand, it retains its qualities for a considerable time. The medical effects of this root are, to stimulate the solids, attenuate the juices, and promote the fluid secretions: it seems to extend its action through the whole habit, and affect the minutest glands. It has frequently done good service in some kinds of scurvy and other chronic disorders, proceeding from a viscidness of the juices, or obstructions of the excretory ducts. Sydenham recommends it likewise in dropsies, particularly those which sometimes follow intermittent fevers. Both water and rectified spirit extract the virtues of this root
by

by infusion, and elevate them in distillation: along with the aqueous fluid, an essential oil arises, possessing the whole taste and pungency of the horse-radish. The college have given us a very elegant compound water, which takes its name from this root.

RAPI *radix, semen: Rapi sativi rotundi C. B. Brasica rapa Lin.* Turneps; the roots and seeds.

The roots are accounted a wholesome aperient food: the liquor pressed out from them after boiling has been sometimes used medicinally as a deobstruent and diuretic. The seeds are slightly pungent.

REALGAR, a fossil composed of arsenic and sulphur. Vide **ARSENICUM**.

REGINA PRATI, vide **ULMARIA**.

RESINA ALBA. See **TERRIBENTHINA**.

RHABBARBARUM: Rhei radix. Rhubarb; the root [*L. E.*]

The plant, which is of the dock kind, grows spontaneously in China, and endures the colds of our own climate. Two sorts of rhubarb are met with in the shops. The first is imported from Turkey and Russia, in roundish pieces freed from the bark, with a hole through the middle of each; they are externally of a yellow colour, and on cutting appear variegated with lively reddish streaks. This is the root of the *rheum palmatum foliis palmatis acuminatis Lin.* The other, which is less esteemed, comes immediately from the East-Indies, in longish pieces, harder, heavier, and more compact than the foregoing. The first sort, unless kept very dry, is apt to grow

mouldy and worm-eaten; the second is less subject to these inconveniences. Some of the more industrious artists are said to fill up the worm-holes with certain mixtures, and to colour the outside of the damaged pieces with powder of the finer sorts of rhubarb, and sometimes with cheaper materials: this is often so nicely done, as effectually to impose upon the buyer, unless he very carefully examines each piece. The marks of good rhubarb are, that it be firm and solid, but not flinty; that it be easily pulverable, and appear, when powdered, of a fine bright yellow colour: that upon being chewed, it imparts to the spittle a saffron tinge, without proving slimy or mucilaginous in the mouth. Its taste is subacid, bitterish, and somewhat astringent: the smell lightly aromatic.

Rhubarb is a mild cathartic, which operates without violence or irritation, and may be given with safety even to pregnant women and to children. In some people, however, it always occasions severe griping. Besides its purgative quality, it is celebrated for an astringent one, by which it strengthens the tone of the stomach and intestines, and proves useful in diarrhoea and disorders proceeding from a laxity of the fibres. Rhubarb in substance operates more powerfully as a cathartic than any of the preparations of it. Watery tinctures purge more than the spirituous ones; whilst the latter contain in greater perfection the aromatic, astringent, and corroborating virtues of the rhubarb. The dose, when intended as a purgative, is from a scruple to a dram or more.

The Turkey rhubarb is, among us, universally preferred to the East-India sort, though this last is for some purposes at least equal to the other; it is manifestly more astringent,

gent, but has somewhat less of an aromatic flavour. Tinctures drawn from both with rectified spirit, have nearly the same taste: on distilling off the menstruum, the extract left from the tincture of the East-India rhubarb proved considerably the strongest. They are both the produce of the same climate, and probably the roots of the same plant taken up at different seasons, or cured in a different manner.

‘Rhubarb is now raised in Britain equal to any that is imported.’

The officinal preparations of this drug are, roasted rhubarb [*L.*], a watery infusion [*E.*], vinous tinctures [*L.*], and spirituous tinctures [*L. E.*] It is an ingredient in sundry compositions, as the syrup of senna and rhubarb, dysenteric electary, stomachic pills [*E.*], ecphractic pills [*L.*], &c.

RHAMNUS CATHARTICUS, vide *SPINA CERVINA*.

RHAPONTICI radix. *Rhabarbari Dioscoridis et antiquorum Tourn.* *Rhei rhapontici Lin.* Rhapontic; the root of a large roundish leaved dock, growing wild on the mountain Rhodope in Thrace, from whence it was brought into Europe, about the year 1610, by Alpinus: it bears the hardest winters of this climate, and is not unfrequent in our botanic gardens. The root of this plant (which appears evidently to have been the rhubarb of the ancients) is by some confounded with the modern rhubarb, though considerably different both in appearance and quality. The rhapontic is of a dusky colour on the surface, of a loose spongy texture; considerably more astringent, but less purgative than rhubarb; in this last intention, two or three drams are required for a dose.

‘RHODODENDRONCHRY.

SANTHEMUM Lin. This plant is a native of Siberia, where it is used as tea, but may be cultivated in our gardens. The Siberians use a kind of decoction of it in rheumatism and gout. They put about two drams of the dried shrub in an earthen pot, with about ten ounces of boiling water, keeping it near a boiling heat for a night, and this they take in the morning. It is said to occasion heat, thirst, a degree of delirium, and a peculiar creeping like sensation in the parts affected. The use of liquids is not allowed, as it is apt to induce vomiting. In a few hours the pain and disagreeable symptoms are relieved, and it is said two or three doses generally complete the cure. The powder has also been used in doses of a few grains.’

RHUS OBSONIORUM, vide *SUMACH*.

RIBESIA: *Fructus ribis vulgaris fructu rubro Raii.* *Ribis rubri Lin.* Red currant bush; the berries.

These have a cool, acidulous sweet taste, sufficiently agreeable both to the palate and stomach.

‘RICINI SEMEN ET EJUS OLEUM. *Ricini vulgaris C. B.* *Ricini communis foliis, petalis, subpalmatis, serratis, Lin.* Palma Christi; the seed with its oil [*E.*]

‘The seeds are nuts about the size of small beans; and are, like the bitter almonds, deleterious. The oil, commonly called nut or castor oil, is got by expression, retains somewhat of the mawkishness and acrimony of the nut: but is, in general, a safe and mild laxative in cases where we wish to avoid irritation, as in those of colic, calculus, gonorrhœa, &c. and some likewise use it as a

purg.

purgative in worm-cases. Half an ounce or an ounce commonly answers with an adult, and a dram or two with an infant.

Some prefer taking it swimming on a glass of water or peppermint water, or in form of emulsion, with mucilage, or with the addition of a little rum, tincture of jalap, or compound tincture of senna.

ROSA DAMASCÆNA: *Rosa purpurea* C. B. *Rosa pallida* Pharm. Edin. *Rosa centifolia* Lin. The damask rose [L. E.]

This elegant flower is common in our gardens. Its smell is very pleasant and almost universally admired; its taste bitterish and subacid. In distillation with water, it yields a small portion of a butyraceous oil, whose flavour exactly resembles that of the roses. This oil, and the distilled water, are very useful and agreeable cordials. Hoffman strongly recommends them as of singular efficacy for raising the strength, cheering and recruiting the spirits, and allaying pain; which they perform without raising any heat in the constitution, rather abating it when inordinate. Damask roses, besides their cordial aromatic virtue, which resides in their volatile parts, have a mildly purgative one, which remains entire in the decoction left after the distillation: this, with a proper quantity of sugar, forms an agreeable laxative syrup, which has long kept its place in the shops. The other officinal preparations of this flower are a solutive honey, and the distilled water; which last is an ingredient in the musk-julep, the confection of kermes, and saponaceous lotion, and is used also in making the simple ointment called pomatum [L.]

ROSA RUBRA: *Rosa rubra*

multiplæ C. B. *Rosa Gallica* Lin. The red rose [L. E.]

This has very little of the fragrance of the foregoing pale sort; and instead of its purgative quality, a mild gratefully astringent one, especially before the flower has opened: this is considerably improved by hasty exsiccation; but both the astringency and colour are impaired by slow drying. In the shops are prepared a conserve, a tincture, honey, troches [L.] and syrup [E.] of this flower; it is an ingredient also in the compound powder of scordium, the troches of Japan earth, mithridate, and theriaca [L.]

RORISMARINI *summitates florentes: Rorismarini hortensis angustiore folio* C. B. *Rorismarini officinalis* Lin. Rosemary; the tops and flowers [E.]

This is a native of Spain, Italy, and the southern parts of France, where it grows in great abundance upon dry gravelly grounds; in the like soils it thrives best with us, and likewise proves stronger in smell, than when produced in moist rich ones: this observation obtains in almost all the aromatic plants.

Rosemary has a fragrant smell, and a warm pungent bitterish taste, approaching to those of lavender: the leaves and tender tops are strongest; next to these the cup of the flower; the flowers themselves are considerably the weakest, but most pleasant. Aqueous liquors extract great share of the virtues of rosemary leaves by infusion, and elevate them in distillation; along with the water arises a considerable quantity of essential oil, of an agreeable strong penetrating smell. Pure spirit extracts in great perfection the whole aromatic flavour of the rosemary, and elevates very little of it in

in distillation: hence the resinous mass left upon abstracting the spirit, proves an elegant aromatic, very rich in the peculiar qualities of the plant. The flowers of rosemary give over great part of their flavour in distillation with pure spirit; by watery liquors, their fragrance is much injured; by beating, destroyed. The officinal preparations of rosemary are, an essential oil from the leaves [L.], or from the herb in flower [E.] a conserve of the flowers, and a spirit called Hungary-water, from the flowery tops [L.] The tops are used also in the compound spirit of lavender [L. E.] cordial confection [L.] and saponaceous balsam [E.]

RUBIÆ TINCTORUM *radix: Rubiæ tinctorum sativæ C. B. Rubiæ tinctorum Lin.* Madder; the root [L. E.]

Madder is raised in some of our gardens for medicinal purposes: it was formerly cultivated among us, in quantity, for the use of the dyers, who are at present supplied from Holland and Zealand. It has little or no smell; a sweetish taste, mixed with a little bitterness. The virtues attributed to it are those of a detergent and aperient; whence it has been usually ranked among the opening roots, and recommended in obstructions of the viscera, particularly of the kidneys, in coagulations of the blood from falls or bruises, in the jaundice, and beginning dropies.

It is observable, that this root, taken internally, tinges the urine of a deep red colour; and in the Philosophical Transactions, we have an account of its producing a like effect upon the bones of animals who had it mixed with their food: all the bones, particularly the more solid ones, were changed, both externally and internally, to a deep

red, but neither the fleshy or cartilaginous parts suffered any alteration: some of these bones macerated in water for many weeks together, and afterwards steeped and boiled in spirit of wine, lost none of their colour, nor communicated any tinge to the liquors. This root appears therefore to be possessed of great subtilty of parts; whence its medical virtues seem to deserve inquiry.

Some use it in half-dram doses several times a day as an emmenagogue.

RUBI IDÆI *fructus: Rubi idæi spinosi C. B. Rubi idæi Lin.* The raspberry bush; the fruit [L.]

This shrub is common in our gardens; and has likewise, in some parts of England, been found wild: it flowers in May, and ripens its fruit in July. Raspberries have a pleasant sweet taste, accompanied with a peculiarly grateful flavour; on account of which they are chiefly valued. As to their virtues, they moderately quench thirst, abate heat, strengthen the viscera, and promote the natural excretions. An agreeable syrup, prepared from the juice, is directed to be kept in the shops.

RUBI VULGARIS *folia, fructus: Rubi vulgaris sive rubi fructu nigro C. B. Rubi fruticosi Lin.* The bramble or black-berry bush; its leaves and fruit.

The shrub is frequently found wild in woods and hedges. The berries have a faint taste without any thing of the agreeable flavour of the foregoing: the leaves are somewhat astringent.

RUSCI, *sive brusci, radix: Rusci myrtifolii aculeati Tourn. Rusci aculeati Lin.* Butchers broom, or kneeholly; the root.

This is a small prickly plant, some-

sometimes found wild in woods. The root has a soft sweetish taste, which is followed by a bitterish one: it is one of the five aperient roots; and in this intention is sometimes made an ingredient in apozems and diet-drinks, for opening slight obstructions of the viscera, purifying the blood and juices, and promoting the fluid secretions.

RUTÆ folia, herba: Rutæ hortensis latifolia C. B. Rutæ graveolentis Lin. Broad-leaved rue; the leaves [*L.*] and herb [*E.*]

This is a small shrubby plant, met with in gardens, where it flowers in June, and holds its green leaves all the winter: we frequently find in the markets a narrow-leaved sort, which is cultivated by some in preference to the other, on account of its leaves appearing variegated during the winter with white streaks.

Rue has a strong ungrateful smell, and a bitterish, penetrating taste: the leaves, when in full vigour, are extremely acrid, inasmuch as to inflame and blister the skin, if much handled. With regard to their medicinal virtues, they are powerfully stimulating, attenuating, and detergent; and hence, in cold phlegmatic habits, they quicken the circulation, dissolve tenacious juices, open obstructions of the excretory glands, and promote the fluid secretions. The writers on the materia medica in general have entertained a very high opinion of the virtues of this plant. Boerhaave is full of its praises; particularly of the essential oil, and the distilled water cohobated or redistilled several times from fresh parcels of the herb: after somewhat extravagantly commending other waters prepared in this manner, he adds, with regard to that of rue, that the greatest commendations he can bestow upon it fall short of its merit: "What medicine (says he)

can be more efficacious for promoting sweat and perspiration, for the cure of the hysteric passion, and of epilepsies, and for expelling poison?" Whatever service rue may be of in the two last cases, it undoubtedly has its use in the others: the cohobated water, however, is not the most efficacious preparation of it. (See Part. iii.) An extract made by rectified spirit contains, in a small compass, the whole virtues of the rue; this menstruum taking up by infusion all the pungency and flavour of the plant, and elevating nothing in distillation. With water, its peculiar flavour and warmth arise; the bitterness, and a considerable share of the pungency, remaining behind.

An essential oil and conserve [*L.*] of rue are kept in the shops. This herb is used also as an ingredient in the electuary of bayberries, compound powder of myrrh, and the green oil [*L.*]

SABINÆ folia seu summitates: Sabine folio tamarisci Dioscoridis C. B. Juniperi sabina Lin. Savin; the leaves or tops. [*L. E.*]

This is an evergreen shrub, clothed with small, somewhat prickly, leaves: it does not produce fruit till very old, and hence has been generally reputed barren. The leaves have a bitter, acrid, biting taste; and a strong disagreeable smell: distilled with water, they yield an essential oil, in larger quantity (as Hoffman observes) than any other known vegetable, the turpentine-tree alone excepted.

Savin is a warm irritating aperient medicine, capable of promoting sweat, urine, and all the glandular secretions. The distilled oil is one of the most powerful emmenagogues; and is found of good service in obstructions of the uterus or other viscera, proceeding from a laxity

laxity and weakness of the vessels, or a cold sluggish indisposition of the juices.

'The powder is sometimes used for consuming venereal warts.'

The essential oil [*L. E.*], a watery extract [*L.*], and the extract in the compound elixir of myrrh [*L.*], are kept in the shops.

SACCHARUM ALBUM.

White or refined sugar.

SACCHARUM PURISSIMUM. Double-refined sugar [*L.*]

SACCHARUM RUBRUM.

Brown or unrefined sugar [*L.*]

SACCHARUM CANDUM.

Sugar-candy.

Sugar is the essential salt of the *arundo saccharifera*, a beautiful large cane growing spontaneously in the East Indies, and some of the warmer parts of the West, and cultivated in great quantity in our American plantations. The expressed juice of the cane is clarified with the addition of lime-water, (without which it does not assume the form of a true sugar), and boiled down to a due consistence; when, being removed from the fire, the saccharine part concretes from the grosser unctuous matter, called *treacle* or *melasses*. This, as yet impure or brown sugar, is farther purified, in conical moulds, by spreading moist clay on the upper broad surface: the watery moisture, slowly percolating through the mass, carries with it a considerable part of the remains of the treacly matter. This clayed sugar, imported from America, is by our refiners dissolved in water, the solution clarified by boiling with whites of eggs and despumation, and after due evaporation poured into moulds: as soon as the sugar has concentered, and the fluid part drained off, the surface is co-

vered with moist clay as before. The sugar, thus once refined, by a repetition of the process becomes the double-refined sugar of the shops. The candy, or crystals, are prepared by boiling down solutions of sugar to a certain pitch, and then removing them into a hot room, with sticks set across the vessel for the sugar to shoot upon: these crystals prove of a white or brown colour, according as the sugar was pure or impure.

The uses of sugar as a sweet are sufficiently well known. The impure sorts contain an unctuous or oily matter, in consequence of which they prove emollient and laxative. The crystals are most difficult of solution; and hence are properest where this soft lubricating sweet is wanted to dissolve slowly in the mouth.

SAGAPENUM: *Gummi Resina* [*L. E.*] A concrete juice brought from Alexandria, either in distinct tears, or run together in large masses. It is outwardly of a yellowish colour; internally, somewhat paler, and clear like horn; grows soft upon being handled, and sticks to the fingers: its taste is hot and biting; the smell disagreeable, by some resembled to that of a leek, by others to a mixture of asafœtida and galbanum.

Sagapenum is an useful aperient and deobstruent; and frequently prescribed either alone or in conjunction with ammoniacum or galbanum, for opening obstructions of the viscera, and in hysterical disorders arising from a deficiency of the menstrual purgations. It likewise deterges the pulmonary vessels, and proves of considerable service in some kinds of asthmas where the lungs are oppressed by viscid phlegm. It is most commodiously given in the form of pills; from two or three grains to half a dram may be given every night or oftener, and continued

rued for some time. When sagapenum is scarce, the druggists usually supply its place with the larger and darker coloured masses of bdellium, broken into pieces; which are not easily distinguished from it.

Sagapenum is an ingredient in the compound powder of myrrh, gum pills, electary of bay-berries, mithridate and theriaca of the London pharmacopœia. The college of Edinburgh has nowhere employed either this gum or opoponax, giving the preference to ammoniacum and galbanum.

SAGO. This is the produce of an oriental tree, called by C. Bauhine *pahniam referens arbor farinifera*. The medullary part of the tree is beaten with water, and made into cakes, which are used by the Indians as bread. They likewise put the powder into a funnel, and wash it with water over a hair-sieve, which allows only the finer part to pass through the water. The water, on standing, deposits the fecule; which being passed through perforated copper-plates, is formed into grains called *Sago*. It forms an agreeable jelly with water, milk, or broth, and is much used in phthical and convalescent cases.

'SAL ALKALINUS FIXUS VEGETABILIS, *praesertim is qui pearl-ashes lingua vernacula dicitur*: Vegetable fixed alkaline salt, particularly that named in English, pearl-ashes. [E.] See CINERES RUSSICI, and Part I. and III.

The Edinburgh college having rejected the oily alkalies of broom, wormwood, &c. orders the pearl-ashes to be burnt in a crucible, dissolved in water, and the liquor to be decanted and evaporated to dryness in an iron pot. If the salt is thus properly purified, it dissolves

in equal its weight of water; the solution is free from colour and smell, supplies the place of the ol. tartari per deliquium, and in a dry state that of the salt of tartar.

The mild vegetable alkali is used in form of lotion, in some cutaneous diseases, and as a stimulant to the inactive state of the vessels in certain ulcers. It is used internally as a diaphoretic or diuretic, and of late in calculous complaints.

When the liquid alkali is deprived of its fixed air by quicklime, it forms the caustic or soap ley, which in a diluted state is injected by some for removing the mucus and poison in recent gonorrhœa. The pure salt obtained by evaporation forms the common caustic, which, on account of its deliquescent, and consequently spreading quality, is little used. The caustic ley diluted is the basis of the common quack lithontriptics.

It sometimes allays the symptoms of calculus without any evidence of its having acted on the stone, and in some cases the stone has shown marks of its action; but its continued use seldom fails to injure the constitution, or the intestinal canal.

'SAL ALKALINUS FIXUS FOSSILIS, *vulgo sal soda, ex herba kali usta*: Fossile fixed alkaline salt; commonly salt of soda, from the burnt herb kali. [E.] See FOSSIL FIXT ALKALINE SALT, Part I. and III.

This does not differ much in its general properties from the above. It is procurable from the ashes of sea plants, particularly from kali, and it is called Soda or Bariglia. This purified has been recommended by some in scrofula.

SAL AMMONIACUS. Sal ammoniac [L. E.]

This

This is an artificial saline concrete, said to be prepared by sublimation from the foot of cow-dung. It is brought to us from Egypt, in large round cakes, convex on one side, and concave on the other; and sometimes in conical loaves: on breaking, they appear composed of needles, or stræ, running transversely. The best are almost transparent, colourless, and free from any visible impurities: those most commonly met with are of a grey yellowish colour on the outside, and sometimes black, according as the matter is more or less impure. The taste of this salt is very sharp and penetrating. It dissolves in twice its weight, or a little less, of water; and upon evaporating a part of the menstruum, concretes again into long shining spicula, or thin fibrous plates, like feathers.

Sal ammoniac appears from experiments to be composed of marine acid, united with a volatile alkali. If mingled with fixt alcalis or absorbent earths, and exposed to a moderate fire, a large quantity of volatile salt sublimes, the acid remaining united with the intermediate; if treated in the same manner with quicklime, an exceeding penetrating volatile spirit arises, but no solid salt is obtained. Exposed alone to a considerable heat, it sublimes entire, without any alteration of its former properties: ground with certain metallic substances, it elevates some part of them along with itself, and concretes with the remainder into a mass, which readily flows into a liquor in a moist air; this appears in most respects similar to a saturated solution of the metal made directly in spirit of salt.

Pure sal ammoniac is a perfectly neutral salt, capable of attenuating viscid humours, and promoting a diaphoresis, or the urinary discharge,

according to certain circumstances in the constitution, or as the patient is managed during the operation. If a dram of the salt be taken, dissolved in water, and the patient kept warm, it generally proves sudorific; by moderate exercise, or walking in the open air, its action is determined to the kidneys; a large dose gently loosens the belly, and a still larger proves emetic. This salt is recommended by many as an excellent febrifuge, and by some has been held a great secret in the cure of intermittents. It is undoubtedly a powerful aperient, and seems to pass into the minutest vessels; and as such may in some cases be of service, either alone, or joined with bitters or the bark. This salt is sometimes employed externally as an antiseptic, and in lotions and fomentations, for œdematous and scirrhus tumours: as also in gargarisms for inflammations of the tonsils, and for attenuating and dissolving thick viscid mucus. 'Some use it in form of lotion, in certain ulcers, and for removing common warts.'

'There are several manufactures for it now in Britain.'

SAL CATHARTICUS AMARUS [L. E.] The bitter purging salt; extracted from the bitter liquor remaining after the crystallization of common salt from seawater. It is the salt of the Epsom and some other purging mineral waters. We usually meet with it in minute crystals, of a snowy appearance; dissolved in water, and crystallized afresh, it concretes, if properly managed, into larger ones, of a rectangular prismatic figure, resembling those of the artificial cathartic salt of Glauber, to which they are sometimes substituted in the shops.

All these salts have a penetrating bitterish taste: they dissolve in less than

than an equal weight of water: in a moderate heat, they melt, bubble up into blisters, and soon change into a white spongy mass, with the loss of above half their weight: this calx tastes bitterer than the salts did at first, and almost totally dissolves again in water. The acid of these salts is the vitriolic: the basis of the natural is magnesia; of the artificial, an alkaline salt, the same with the basis of sea-salt. Hence upon adding alkaline salts to a solution of the salts of Glauber, no change ensues: whilst the salts obtained from the purging waters, or the bittern of marine waters, grow milky upon this addition, and deposit their earth, the alkaline salt being taken up in its place.

The sal catharticus is a mild and gentle purgative, operating with sufficient efficacy, and in general with ease and safety, rarely occasioning any gripes, sickness, or the other inconveniences which purgatives of the resinous kind are too often accompanied with. Six or eight drams may be dissolved for a dose in a proper quantity of common water; or four, five, or more, in a pint, or quart of the purging waters. These liquors may likewise be so managed as to promote evacuation, by the other emunctories: if the patient is kept warm, they increase perspiration; by moderate exercise in a cool air, the urinary discharge. Some allege this salt has a peculiar effect in allaying pain, as in colic, even independently of evacuation.

SAL COMMUNE. Common or alimentary salt. This is a neutral salt, differing from most others in occasioning drought when swallowed. It dissolves in somewhat less than three times its weight of water; the solution slowly evaporated, and set to shoot, affords cubical crystals, which unite together

into the form of hollow truncated pyramids. Exposed to the fire, it crackles and flies about, or decrepitates as it is called; soon after, it melts, and appears fluid as water. A small quantity of this salt, added to the nitrous acid, enables it to dissolve gold, but renders it unfit for dissolving silver: if a solution of silver be poured into liquors containing even a minute portion of common salt, the whole immediately grows turbid and white; this phenomenon is owing to the precipitation of the silver.

This salt is either found in a solid form in the bowels of the earth, or dissolved in the waters of the sea or saline springs.

1. *Sal gemma* [L.] Rock salt. This is met with in several parts of the world, but in greatest plenty in certain deep mines, of prodigious extent, near Cracow in Poland; some is likewise found in England, particularly in Cheshire. It is for the most part very hard, sometimes of an opaque snowy whiteness, sometimes of a red, green, blue, and other colours. When pure, it is perfectly transparent and colourless; the other sorts are purified by solution in water and crystallizations in order to fit them for the common uses of salt.

2. *Sal marinus* [L.], *Sal marinus Hispanus* [E.] The salt extracted from sea-water and saline springs. Sea waters yield from one-fiftieth to one-thirtieth their weight of pure salt: several springs afford much larger quantities; the celebrated ones of our own country at Nantwich, Northwich, and Droitwich, yield (according to Dr Brownrigg) from one-sixth to somewhat more than one-third. There are two methods of obtaining the common salt from these natural solutions of it: The one, a hasty evaporation of the aqueous fluid till the salt begins to con.

concrete, and fall in grains to the bottom of the evaporating pan, from whence it is raked out, and set in proper vessels to drain from the brine or bittern: the other, a more slow and gradual evaporation, continued no longer than till a saline crust forms on the top of the liquor; which, upon removing the fire, soon begins to shoot, and run into crystals of a cubical figure. In the warmer climates, both these processes are effected by the heat of the sun. The salts obtained by them differ very considerably: that got by a hasty evaporation is very apt to relent in a moist air, and run per deliquium; an inconvenience which the crystallized salt is not subject to: this last is likewise found better for the preserving of meat, and sundry other purposes.

Common salt, in small quantities, is supposed to be warming, drying, and to promote appetite and digestion: in large doses, as half an ounce, it proves cathartic. It is sometimes used to check the operation of emetics, and make them run off by stool; and as a stimulus in gylsters.

‘**SAL CORNU CERVI**; *i. e.* *Sal alkalinus volatilis, siccus, ex ossibus vel cornibus animalium igni paratus, ab oleo purificatus.* Salt of hartshorn; *i. e.* dry volatile alkaline salt, obtained by means of fire from the bones or horns of animals, freed from its oil [*E.*]’ See Part III.

‘It is a quick and powerful stimulant, and as such is employed externally to the nose in syncope; and with oil in inflammation, as cynanche, as a rubefacient. It is used internally in various low states of the system.’

‘**SALICIS RAMULORUM CORTEX**: *Salicis fragilis Lin.*

Common white willow, the bark of its branches [*E.*]’

SALVIÆ folia: *Salvia majoris C. B. Salvia officinalis Lin.* Common sage (the green and red sorts); the leaves [*L. E.*]

SALVIÆ hortensis minoris folia, summitates: *Salvia minoris aurita et non aurita C. B.* Small sage or sage of virtue; the leaves and tops.

These plants are common in our gardens, and flower in May and June: the green and red common sages differ no otherwise than in the colour of the leaves; the seeds of one and the same plant produce both: the small sort is a distinct species; its leaves are narrower than the others, generally of a whitish colour, and never red; most of them have at the bottom a piece standing out on each side in the form of ears. Both sorts are moderately warm aromatics, accompanied with a light degree of astringency and bitterness; the small sort is the strongest, the large most agreeable.

The writers on the materia medica are full of the virtues of sage, and derive its name from its supposed salutary qualities, (*Salvia salvatrix, naturæ conciliatrix—Cur moriatur homo, cui salvia crescit in horto, &c.*) Its real effects are, to moderately warm and strengthen the vessels; and hence, in cold phlegmatic habits, it excites appetite and proves serviceable in debilities of the nervous system. The best preparation for these purposes is an infusion of the dry leaves, drank as tea; or a tincture, or extract, made with rectified spirit, taken in proper doses; these contain the whole virtues of the sage; the distilled water and essential oil, only its warmth and aromatic quality, without any thing of its roughness

ness or bitterishness. Aqueous infusions of the leaves, with the addition of a little lemon-juice, prove an useful diluting drink in febrile disorders, of an elegant colour, and sufficiently acceptable to the palate.

SALVIÆ SYLVESTRIS *folia*: *Scorodotidis sive scordii foliis salvia* J. B. Wood sage; the leaves.

This grows wild in woods and hedges. In smell, taste, and medical virtues, it comes nearer to scordium than sage: it is less disagreeable than the former, but more so than the latter.

SAMBUCI *cortex, flores, bacca*: *Sambuci fructus in umbella nigro* C. B. *Sambuci nigra* Lin. Common black berried elder; bark [E.], flowers and berries [L. E.]

This is a large shrub, frequent in hedges; it flowers in May, and ripens its fruits in September. The inner green bark of its trunk is gently cathartic; an infusion of it in wine, or the expressed juice, in the dose of half an ounce or an ounce, is said to purge moderately, and in small doses to prove an efficacious deobstruent, capable of promoting all the fluid secretions. The young buds, or rudiments of the leaves, are strongly purgative, and act with so much violence as to be deservedly accounted unsafe. The flowers are very different in quality: these have an agreeable aromatic flavour, which they give over in distillation with water, and impart by infusion to vinous and spirituous liquors. The berries have a sweetish, not unpleasant taste; nevertheless, eaten in substance, they offend the stomach: the expressed juice, inspissated to the consistence of a rob, proves an useful aperient medicine; it opens obstructions of the viscera, promotes

the natural evacuations, and if continued for a length of time does considerable service in sundry chronical disorders. It is observable, that this juice (which in its natural state is of a purplish colour) tinges vinous spirits of a deep red.

A rob is prepared from the berries [L.] An oil of elder is prepared by boiling the flowers in oil olive [L.]; and an ointment, by boiling them in a mixture of oil and suet [L.]

SAMPSUCHUS, vide **MAJORANA**.

SANDARACHA, a fossil composed of arsenic and sulphur. Vide **ARSENICUM**.

SANGUIS DRACONIS:

Gummi refina [L. E.] Dragon's blood, so called: A gum-refin brought from the East-Indies, either in oval drops, wrapped up in flag leaves; or in large masses, composed of smaller tears. 'It is obtained from the *palmiguncus draco* Rumph. amb. the *calamus rotang* Lin.' The writers on the *Materia Medica* in general, give the preference to the former, though the latter is not unfrequently of equal goodness: the fine dragon's-blood of either sort breaks smooth, free from any visible impurities, of a dark red colour, which changes upon being powdered into an elegant bright crimson. Several artificial compositions, coloured with the true dragon's-blood, or Brazil wood, are sometimes sold in the room of this commodity: some of these dissolve, like gums, in water; others crackle in the fire, without proving inflammable; whilst the genuine *sanguis draconis* readily melts and catches flame, and is not acted on by watery liquors. It totally
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dissolves in pure spirit, and tinges a large quantity of the menstruum of a deep red colour: it is likewise soluble in expressed oils, and gives them a red hue, less beautiful than that communicated by anchusa. This drug, in substance, has no sensible smell or taste; when dissolved, it discovers some degree of warmth and pungency. It is usually, but without foundation, looked upon as a gentle astringent, and sometimes directed as such in extemporaneous prescription against femoral gleet, the fluor albus, and other fluxes. In these cases, it is supposed to produce the general effects of resinous bodies, lightly incrassating the fluids, and somewhat strengthening the solids. It is an ingredient in the styptic powder and strengthening plaster [L.]

SANICULÆ, seu Diapensia, *folia: Saniculæ officinarum C. B. Saniculæ Europææ Lin.* Sanicle; the leaves.

This plant grows wild in woods and hedges, and flowers in May. The leaves have an herbaceous roughish taste: they have long been celebrated for *sanative* virtues, both internally and externally. Nevertheless their effects, in any intention, are not considerable enough to gain them a place in the present practice.

SANTALUM ALBUM. White saunders; a wood brought from the East Indies in billets about the thickness of a man's leg, of a pale whitish colour. 'This is not, as has been supposed, a different species from the following, but that part of the yellow saunders wood which lies next the bark.' Greatest part of it, as met with in the shops, has no smell or taste, nor any sensible quality that can re-

commend it to the notice of the physician.

SANTALUM CITRINUM: *Santalum album Lin. [E.]* Yellow saunders; a pale yellowish wood brought from the East Indies, of a pleasant smell, and a bitterish aromatic taste, accompanied with an agreeable kind of pungency. This elegant wood might undoubtedly be applied to valuable medical purposes, though at present very rarely made use of. Distilled with water, it yields a fragrant essential oil, which thickens in the cold into the consistence of a balsam. Digested in pure spirit, it imparts a rich yellow tincture; which being committed to distillation, the spirit arises without bringing over any thing considerable of the flavour of the saunders. The residuum contains the virtues of six times its weight of the wood. Hoffman looks upon this extract as a medicine of similar virtues to ambergris; and recommends it as an excellent restorative in great debilities.

SANTALUM RUBRUM: *Pterocarpus santalinus Lin. [L. E.]* Red saunders; a wood brought from the East Indies in large billets, of a compact texture, a dull red, almost blackish colour on the outside, and a deep brighter red within. This wood has no manifest smell, and little or no taste. It has been commended as a mild astringent, and a corroborant of the nervous system; but these are qualities that belong only to the yellow sort.

The principal use of red saunders is as a colouring drug; in which intention it is employed in the *balsamum Locatelli* [L.] and *spiritus lavendulæ compositus* [L. E.] It communicates a deep red to rec-

tified

tified spirit, but gives no tinge to aqueous liquors: a small quantity of the resin, extracted by means of spirit, tinges a large one of fresh spirit, of an elegant blood red. There is scarce any oil, that of lavender excepted, to which it communicates its colour. Geoffroy and others take notice, that the Brazil woods are sometimes substituted to red saunders; and the College of Brussels are in doubt whether all that is sold among them for saunders, is not really a wood of that kind. According to the account which they have given, their saunders is certainly the Brazil wood; the distinguishing character of which is, that it imparts its colour to common water.

SANTONICUM : *Artemisia santonicum* [E.] Worm-feed; the produce of a plant of the wormwood or mugwort kind, growing in the Levant.

It is a small, light, chaffy seed, composed as it were of a number of thin membranous coats, of a yellowish colour, an unpleasant smell, and a very bitter taste. These seeds are celebrated for anthelmintic virtues (which they have in common with other bitters); and are sometimes taken in this intention, either along with melasses, or candied with sugar: their unpleasant taste renders the form of a powder or decoction inconvenient. They are not very often met with genuine in the shops.

SAPO DURUS [L.]: *Sapo albus Hispanicus* [E.] White Spanish soap.

SAPO MOLLIS [L.]: Common soft soap.

SAPO NIGER, *seu Melanosmegma* : Black soft soap.

Soap is composed of expressed vegetable oils or animal fats, united with alkaline lixivium. The first sort, or white hard-soap, is made with the finer kinds of oil olive; the common soft sort with coarser oils, fat, tallow, or a mixture of all these; and the black (as is said) with train-oil.

The purer hard soap is the only sort intended for internal use. This, triturated with oily or resinous matters, renders them soluble in water, and hence becomes an useful ingredient in pills composed of resins, promoting their dissolution in the stomach, and union with the animal-fluids, though gum is certainly preferable. Boerhaave was a great admirer of soap; and in his private practice seldom prescribed any resinous pills without it, unless where an alkalescent or putrid state of the juices forbade its use. From the same quality, soap likewise seems well fitted for dissolving such oily or unctuous matters as it may meet with in the body, attenuating viscid juices, opening obstructions of the viscera, and deterging all the vessels it passes through. It has likewise been supposed a powerful menstruum for the human calculus; and a solution of it in lime-water, as one of the strongest dissolvents that can be taken with safety into the stomach. The virtue of this composition has been thought considerably greater than the aggregate of the dissolving powers of the soap and lime-water when unmixed. See the *Edinburgh Medical Essays*.

The soft soaps are more penetrating and acrimonious than the hard. The only medical use of these is for some external purposes.

Hard soap gives name to an officinal plaster [L. E.], liniment [L.], and balsam [E.]: it is joined to opium, to render it more readily

soluble in the stomach, in the *pilule saponaceæ* [L.]. Soft soap is an ingredient in the milder common caustic [L.]

SAPONARIÆ *folia, radix* : *Saponaria majoris levis* C. B. *Saponaria officinalis* Lin. Soapwort, or bruisewort; the herb and root.

This grows wild, though not very common, in low wet places, and by the sides of running waters; a double-flowered sort is frequent in our gardens. The leaves have a bitter, not agreeable taste; agitated with water they raise a saponaceous froth, which is said to have nearly the same effects with solutions of soap itself, in taking out spots from cloaths, and the like. The roots taste sweetish and somewhat pungent, and have a light smell like those of liquorice: digested in rectified spirit, they yield a strong tincture, which loses nothing of its taste or flavour in being inspissated to the consistence of an extract. This elegant root has not come much into practice among us, though it promises from its sensible qualities to be a medicine of considerable utility. It is greatly esteemed by the German physicians as an aperient, corroborant, and sudorific; and preferred by the College of Wirtemberg, Stahl, Neumann, and others, to *sarsaparilla*.

SARCOCOLLA [L.]; a concrete juice, brought from Persia and Arabia in small, whitish, yellow grains, with a few of a reddish, and sometimes of a deep red colour, mixed with them; the whitest tears are preferred, as being the freshest. Its taste is bitter, accompanied with a dull kind of sweetness. This drug dissolves in watery liquors, and appears to be chiefly of the gummy kind, with a small admixture of resinous matter.

It is principally celebrated for conglutinating wounds and ulcers (whence its name *σαρκοκολλα*, *flesh-glue*), a quality which neither this nor any other drug has a just title to. It is an ingredient in the *pulvis e cerussa compositus* [L.]

SARSAPARILLÆ *radix* : *Smilacis sarsaparille* Lin. [L. E.] A root brought from the Spanish West Indies. It consists of a great number of long strings hanging from one head: the long roots (the only part made use of) are about the thickness of a goose-quill, or thicker, flexible, composed of fibres running their whole length, so that they may be stript into pieces from one end to the other. They have a glutinous, bitterish, not ungrateful taste, and no smell. This root was first brought into Europe by the Spaniards, about the year 1563, with the character of a specific for the cure of the lues venerea, which made its appearance a little before that time, and likewise of several obstinate chronic disorders. Whatever good effects it might have produced in the warmer climates, it proved unsuccessful in this; inso-much, that many have denied it to have any virtue at all. It appears, however, from experience, that though greatly unequal to the character which it bore at first, it is in some cases of considerable use as a sudorific, where more acrid medicines are improper. The best preparations are, a decoction and extract made with water; a decoction of half an ounce of the root, or a dram of the extract, which is equivalent thereto, may be taken for a dose.

SASSAFRADIS *radix, lignum ejusque cortex* : *Lauri sassafradis* Lin. Sassafras; its wood and bark [E.], and root [L.]

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Sassafras is brought to us in long straight pieces, very light, and of a spongy texture, covered with a rough fungous bark; outwardly of an ash colour, inwardly of the colour of rusty iron. It has a fragrant smell, and a sweetish aromatic subacid taste: the bark tastes much stronger than any other part; and the small twigs stronger than the large pieces. As to the virtues of this root, it is a warm aperient and corroborant; and frequently employed with good success for purifying and sweetening the blood and juices. For these purposes infusions made from the rasped root or bark, may be drank as tea. In some constitutions, these liquors, by their fragrance, are apt, on first taking them, to affect the head: in such cases they may be advantageously freed from their flavour by boiling. A decoction of sassafras, boiled down to the consistence of an extract, proves simply bitterish and subastrigent. Hoffman assures us, that he has frequently given this extract to the quantity of a scruple at a time, with remarkable success, for strengthening the tone of the viscera in cachexies; as also in the decline of intermittent fevers, and in hypochondriacal spasms. Sassafras yields, in distillation, an extremely fragrant oil, of a penetrating pungent taste, so ponderous (notwithstanding the lightness of the drug itself) as to sink in water. Rectified spirit extracts the whole taste and smell of sassafras, and elevates nothing in evaporation: hence the spirituous extract proves the most elegant and efficacious preparation, as containing the virtue of the root entire.

The only officinal preparation of sassafras is the essential oil [L. E.]. The sassafras itself is an ingredient in the decoction of the woods [E.]

and the compound lime-waters [L.] and the oil in the elixir guaiacinum [E.]

SATUREIÆ folia: *Satureia hortensis*, five *cunila sativa*, Plinii C. B. *Satureia hortensis* Lin. Summer savory; the leaves.

This herb is raised annually in gardens for culinary purposes. It is a very pungent warm aromatic: and affords in distillation with water a subtile essential oil, of a penetrating smell, and very hot acrid taste. It yields little of its virtues by infusion to aqueous liquors: rectified spirit extracts the whole of its taste and smell, and elevates nothing in distillation.

SATYRII MARIS radix: *Orchidis morionis maris foliis maculatis* C. B. *Orchidis masculæ* Lin. Orchis; the root [E.]

This plant is frequent in shady places and moist meadows: each plant has two oval roots, of a whitish colour, a viscid sweetish taste, and a faint unpleasant smell. They abound with a glutinous slimy juice. With regard to their virtues, like other mucilaginous vegetables, they thicken the thin serous humours, and defend the solids from their acrimony: they have also been celebrated, though on no very good foundation, for analeptic and aphrodisiac virtues; and frequently made use of in these intentions.

SALEP, a celebrated restorative among the Turks, is probably the prepared root of certain plants of the orchis kind. This drug, as sometimes brought to us, is in oval pieces, of a yellowish white colour, somewhat clear and pellucid, very hard, and almost horny, of little or no smell, and tasting like gum tragacanth. Satyrion root, boiled in

water, freed from the skin, and afterwards suspended in the air to dry, gains exactly the same appearance: the roots thus prepared, dissolve in boiling water into a mucilage. Geoffroy, who first communicated this preparation of orchis, recommends it in consumptions, in bilious dysenteries, and disorders of the breast, proceeding from an acrimony of the juices.

SAXIFRAGÆ ALBÆ *folia, radix: Saxifraga albæ radice granulosa* J. B. *Saxifraga granulata* Lin. White-flowered saxifrage; the leaves and roots, which last are improperly called (from their consisting of little grains) *seeds*.

SAXIFRAGÆ VULGARIS *folia semen: Scelis pratensis nostratis* Raii. *Peucedani filai* Lin. Meadow saxifrage; the leaves and seeds.

These herbs grow wild, the first in dry sandy grounds, the second in fields and meadows. The first is not very common, and hence its leaves and roots have been generally supplied by the leaves and seeds of the second. Neither of them is at present in much esteem, notwithstanding the aperient, diuretic, and lithontriptic virtues formerly attributed to them.

SCABIOSÆ *folia: Scabiosa majoris communioris hirsuta, folio laciniato* Raii. Scabious; the leaves.

This is a rough hairy plant, growing wild in pasture-grounds; of a nauseous bitterish taste. It stands recommended as an aperient, sudorific, and expectorant; but the present practice has little dependence on it.

SCAMMONIUM *gummi resina* [L. E.] Scammony; a concrete juice, extracted from the

roots of a large climbing plant (*convolvulus scammonia* Lin.) growing in the Asiatic Turkey. The best comes from Aleppo, in light spongy masses, easily friable, of a shining ash colour verging to black; when powdered, of a light grey or whitish colour. An inferior sort is brought from Smyrna in more compact ponderous pieces, of a darker colour, and full of sand and other impurities. This juice is chiefly of the resinous kind: rectified spirit dissolves five ounces out of six, the remainder is a mucilaginous substance mixed with dross: proof spirit totally dissolves it, the impurities only being left. It has a faint unpleasant smell, and a bitterish, somewhat acrimonious taste.

Scammony is an efficacious and strong purgative. Some have condemned it as unsafe, and laid sundry ill qualities to its charge; the principal of which is, that its operation is uncertain, a full dose proving sometimes ineffectual, whilst at others a much smaller one occasions dangerous hypercatharses. This difference however is owing entirely to the different circumstances of the patient, and not to any ill quality, or irregularity of operation, of the medicine: where the intestines are lined with an excessive load of mucus, the scammony passes through, without exerting itself upon them; where the natural mucus is deficient, a small dose of this or any other resinous cathartic, irritates and inflames. Many have endeavoured to abate the force of this drug, and correct its imaginary virulence, by exposing it to the fume of sulphur, dissolving it in acid juices, and the like: but this could do no more than destroy as it were a part of the medicine, without making any alteration in the rest. Scammony in substance, judiciously managed, stands not in need of any corrector:

if

if triturated with sugar or with almonds, as we have formerly recommended for other resinous purgatives, it becomes sufficiently safe and mild in operation. It may likewise be conveniently dissolved, by trituration, in a strong decoction of liquorice, and then poured off from the feces: the college of Wirtemberg assures us, that by this treatment it becomes mildly purgative, without being attended with gripes, or other inconveniencies; and that it likewise proves inoffensive to the palate. The common dose of scammony is from three to twelve grains.

Scammony gives name to an officinal compound powder and electary [L.]; and is an ingredient in the compound powder of fenna, the cathartic extract, the coloquintida pills, mercurial pills [L.]

SCHÆNANTHUS, vide JUNCUS ODORATUS.

SCILLÆ radix: *Scille radice alba* C. B. *vel Scille vulgaris radice rubra* C. B. *Scille maritima* Lin. The squill, or sea-onion; its root [E.]

This is a sort of onion, growing spontaneously upon dry sandy shores in Spain and the Levant, from whence the root is annually brought into Europe. It should be chosen plump, sound, fresh, and full of a clammy juice: some have preferred the red sort, others the white, though neither deserves the preference to the other; the only difference perceivable betwixt them, is that of the colour; and hence the college allow both to be used promiscuously. This root is to the taste very nauseous, intensely bitter, and acrimonious: much handled, it exulcerates the skin. With regard to its medical virtues, it powerfully stimulates the solids, and attenuates

viscid juices; and by these qualities promotes expectoration, urine, and (if the patient is kept warm) sweat: if the dose is considerable, it proves emetic, and sometimes purgative. The principal use of this medicine is where the primæ viæ abound with mucous matter, and the lungs are oppressed by tenacious phlegm. Dr Wagner (in his clinical observations) recommends it given along with nitre, in hydropical swellings, and in the nephritis; and mentions several cures which he performed, by giving from four to ten grains of the powder for a dose, mixed with a double quantity of nitre: he says, that thus managed, it almost always operates as a diuretic, though sometimes it vomits or purges. In dropsy, dried squills is often combined with mercury. The most commodious form for the taking of squills, unless when designed as an emetic, is that of a bolus or pill: liquid forms are to most people too offensive, though these may be rendered less disagreeable both to the palate and stomach by the addition of aromatic distilled waters. This root yields the whole of its virtues, both to aqueous and vinous menstrua, and likewise to vegetable acids. Its officinal preparations are, baked squills [L.] and the baked squills made into troches [L.] designed as an ingredient in theriaca [L.]; dried squills [L.], a syrup and vinegar [E.], an oxymel [L.], and pills [E.]

SCINCORUM ventres [L.]

The belly of the skink; a kind of small lizard, brought dry from Egypt. It stands recommended as a great restorative: whatever virtues it may have as used fresh by the Egyptians, it has none as it comes to us, and serves to uselessly increase the articles of the mithridate.

SCLAREA, vide **HORMINUM**.

SCOLOPENDRIUM, vide **LINGUA CERVINA**.

SCORDII folia: *Chamedryos palustris canescens* Tourn. *Teucrii scordii* Lin. Water-germander; the leaves [*L. E.*]

This is a small, somewhat hairy plant, growing wild in some parts of England, though not very common; the shops are generally supplied from gardens. It has a bitter taste, and a strong disagreeable smell. Scordium is of no great esteem in the present practice, notwithstanding the deobstruent, diuretic, and sudorific virtues which it was formerly celebrated for. It enters the mithridate, theriaca, and cataplasm of cummin seed [*L.*]; and gives name to two compound powders, and an electary [*L.*] tho' not the most valuable of their ingredients.

SCORZONERÆ radix: *Scorzonera latifolia sinuata* C. B. *Scorzonera Hispanica* Lin. Viper's grass; the root.

Scorzonera is met with only in gardens. The roots abound with a milky juice, of a bitterish sub-acrid taste; and hence may be of some service, for strengthening the tone of the viscera, and promoting the fluid secretions. They were formerly celebrated as alexipharmacs, and for throwing out the measles and small-pox; but have now almost entirely lost their character.

SCROPHULARIÆ VULGARIS folia, radix: *Scrophularia nodosa fetida* C. B. *Scrophularia nodosa* Lin. Fig-wort; the leaves and root.

This herb grows wild in woods and hedges: the roots are of a white colour, full of little knobs or

protuberances on the surface: this appearance gained it formerly some repute against scrophulous disorders and the piles; and from hence it received its name: but modern practitioners expect no such virtues from it. It has a faint unpleasant smell, and a somewhat bitter disagreeable taste.

SCROPHULARIÆ AQUATICÆ MAJORIS folia: *Scrophularia maxima radice fibrosa* J. B. *Scrophularia aquatica* Lin. Greater water fig-wort; the leaves.

This is a large plant, met with chiefly on the sides of rivers. The leaves have a bitter taste, and an ungrateful smell: they are principally celebrated, though on no very good grounds, as a corrector of sen-
na. See the article **SENNÆ**.

SEBESTEN: *Mixa five Sebesten* J. B. A sort of plum, brought half dried from the East Indies: it is the fruit of the *Cordia myxa* Lin, and is of a dark or blackish brown colour, with whitish or ash-coloured cups; the flesh sticks close to the stone, which contains sometimes one and sometimes two kernels. This fruit has a sweet, very glutinous taste: and hence has been employed for softening acrimonious humours, in some kinds of hoarseness, and in coughs from thin sharp defluxions: at present it is not often met with in the shops.

SECALI semina: *Secali hyberni vel majoris* C. B. *Secali cerealis* Lin. Rye; the seeds.

These are little regarded as an article of the materia medica: as food, they are accounted more detergent than most other kinds of grain.

SEDIMAJORIS, seu Sempervivi majoris, folia: *Sedi majoris vulgaris* C.

C. B. Sempervivi tectorum Lin.
Greater house-leek; the leaves.

This is a low fleshy leaved plant growing on old walls, and on the tops of houses. It stands recommended as a cooler, though its sensible qualities discover no great foundation for any virtue of this kind; the taste is herbaceous, with a slight degree of pungency. It is remarkable of this plant, that its juice purified by filtration (when it appears of a dilute yellowish colour) upon the admixture of an equal quantity of rectified spirit of wine, forms a beautiful white, light coagulum, like the finer kinds of pomatum: this proves extremely volatile; freed from the aqueous phlegm, and exposed to the air, it in a very little time totally exhales. From hence it is concluded (in the medicor. Si-lefiac. satyræ) that house-leek contains a volatile alkaline salt; but there are many substances besides these salts which coagulate with spirit of wine.

SEMPERVIVUM, vide SEDUM.

SENECIO, vide ERIGERUM.

SENEKA [*E.*] Senecka, rattle-snake root; the root of the *polygala senega Lin.* which grows spontaneously in Virginia, and bears the winters of our own climate. This root is usually about the thickness of the little finger, variously bent and contorted, and appears as if composed of joints, whence it is supposed to resemble the tail of the animal whose name it bears: a kind of membranous margin runs on each side, the whole length of the root. Its taste is at first acid, afterwards very hot and pungent.

This root is not at present much known in the shops. The Senegaro Indians are said to prevent the fa-

tal effects which follow from the bite of the rattle-snake, by giving it internally, and by applying it externally to the wound. It has been strongly recommended in pleurifies, peripneumonies, and other inflammatory distempers; in these cases, Lemery, du Hamel, and Jussieu, experienced its good success (see the French memoirs for the years 1738, 1739.) Its more immediate effects are those of a diuretic, diaphoretic, and cathartic; sometimes it proves emetic: the two last operations may be occasionally prevented, by giving the root in small doses, along with aromatic simple waters, as that of cinnamon. The usual dose of the powder is thirty grains or more.

Some have likewise employed this root in hydropic cases, and not without success; Bouvart (in the memoirs above mentioned, 1744.) relates examples of its occasioning a plentiful evacuation by stool, urine, and perspiration; and by this means removing the disease, after the common diuretics and hydragogues had failed: where this medicine operates as a cathartic, it generally proves successful: if it acts by liquefying the blood and juices, without occasioning a due discharge, it should either be abstained from, or assisted by proper additions.

SENNÆ, *folia*: *Sennæ Alexandrina foliis acutis C. B. Cassiæ sennæ Lin.* Senna; the leaves. [*L. E.*]

This is a shrubby plant cultivated in Persia, Syria, and Arabia; from whence they are brought, dried and picked from the stalks, to Alexandria in Egypt; and thence imported into Europe. They are of an oblong figure, sharp pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowish green colour, a faint not very disagreeable smell, and

and a subacid, bitterish, nauseous taste. Some inferior sorts are brought from Tripoli and other places; these may easily be distinguished by their being either narrower, longer, and sharper pointed; or larger, broader, and round pointed, with small prominent veins; or large and obtuse, of a fresh green colour, without any yellow cast.

Senna is a very useful cathartic, operating mildly, and yet effectually: and, if judiciously dosed and managed, rarely occasioning the ill consequences which too frequently follow the exhibition of the stronger purges. The only inconveniences complained of in this drug are, its being apt to gripe, and its nauseous flavour. The *gripping* quality depends upon a resinous substance, which, like the other bodies of this class, is naturally disposed to adhere to the coats of the intestines. The more this resin is divided by such matters as take off its tenacity, the less adhesive, and consequently the less irritating and gripping it will prove; and the less it is divided, the more gripping: hence senna given by itself, or infusions made in a very small quantity of fluid, gripe severely, and purge less than when diluted by a large portion of suitable menstruum, or divided by mixing the infusion with oily emulsions. The *ill flavour* of this drug is said to be abated by the greater water-figwort: but we cannot conceive that this plant, whose smell is manifestly fetid and its taste nauseous and bitter, can at all improve those of senna: others recommend bohea-tea, though neither has this any considerable effect. The smell of senna resides in its more volatile parts, and may be discharged by lightly boiling infusions of it made in water; the liquor thus freed from the peculiar flavour of the senna, may be easily rendered grateful to the taste, by

the addition of any proper aromatic tincture or distilled water. The colleges, both of London and Edinburgh, have given several very elegant infusions of this drug (which may be seen in Part III.) as also spirituous tinctures [*L. E.*], compound powders [*L.*] The dose of senna in substance, is from a scruple to a dram; in infusion, from one to three or four drams.

It has been customary to reject the pedicles of the leaves of senna as of little or no use: Geoffroy however observes, that they are not much inferior in efficacy to the leaves themselves. The pods, or seed-vessels, met with among the senna brought to us, are by the college of Brussels preferred to the leaves: they are less apt to gripe, but proportionably less purgative.

SERICUM, et folliculi bombycis: Silk, and silk-worms bags. These are scarce ever made use of for any medicinal purposes. In their crude state they are certainly very insignificant: though if burnt in a close vessel, after the same manner as sponge, they would probably prove a medicine of similar, and perhaps of superior virtue. They yield a larger quantity of volatile salt than any other animal substance I know of.

SERPENTARIÆ VIRGINIANÆ radix: *Aristolochia serpentaria* Lin. Virginian snake-root [*L. E.*] The root of a species of aristolochia, growing in Virginia and Carolina.

It is a small, light, bushy root, consisting of a number of strings or fibres, matted together, issuing from one common head; of a brownish colour on the outside, and paler or yellowish within. It has an aromatic smell, like that of valerian, but more agreeable; and a warm bitterish, pungent taste. This
root

root is a warm diaphoretic and diuretic: it has been greatly celebrated as an alexipharmac, and esteemed one of the principal remedies in malignant fevers and epidemic diseases. Some recommend it in cutaneous affections. It is given in substance from ten to thirty grains, and in infusion to a dram or two. Both watery and spirituous menstrua extract its virtue by infusion, and elevate some share of its flavour in distillation: along with the water a small portion of essential oil arises. A spirituous tincture [L. E.] is directed as an official: it enters also the cataplasm of cummin seed [L.]

SERPILLI *summitates florentes*: *Serpilli vulgaris minoris* C. B. *Thymi serpilli* Lin. Mother of thyme; the flowering tops [E.]

This is a small creeping plant, common on heaths and dry pasture grounds. Its taste, smell, and medical virtues are similar to those of thyme, but weaker.

SESAMI *semen*: *Digitalis orientalis sesamum dicta* Tourn. *Sesami orientalis* Lin. The seeds called Oily Purging Grain.

This plant is cultivated in the eastern countries, from whence the seeds are brought to us. They very properly deserve the name of *oily*, as they yield upon expression a larger quantity of oil than almost any other known vegetable. The appellation *purging*, they have no title to; among the Indians, they are said to be used as food.

SESELIS VULGARIS *semen*: *Ligustici quod seseli officinarum* C. B. *Laserpitii sileris* Lin. Common hartwort: the seeds [L.]

SESELIS MASSILIENSIS *semen*: *Seselis Massiliensis ferula folio*.

C. B. *Seselis tortuosi* Lin. Italian hartwort; the seeds [L.]

These plants grow spontaneously in the warmer climates; amongst us they are met with only in the gardens of the curious. The seeds and roots of both sorts have an agreeable aromatic smell and taste; and in this light might be occasionally employed, though at present they are in disuse, being scarcely otherwise regarded than as the seeds of the first sort are an ingredient in mithridate and theriaca.

SESELI PRATENSE, vide **SAXIFRAGA VULGARIS**.

SILER MONTANUM, vide **SESELI VULGARE**.

SIMAROUBÆ *cortex*: *Simarouba quassia* Lin. Simarouba; the bark [E.]: A bark, with pieces of the wood adhering to it, brought from Guiana, in long tough pieces of a pale yellowish colour, and a pretty strong bitter taste. Some esteem it in dysenteric fluxes: a decoction of half a dram is given for a dose, and repeated at intervals of three or four hours.

SINAPIS *semen*: *Sinapis albi* Lin. White mustard seed [E.] *Sinapis nigri* Lin. Mustardseed [L.] The former of these differs from the latter only in being somewhat less pungent [L. E.]

This plant is sometimes found wild, but for culinary and medicinal uses is cultivated in gardens. Mustard, by its acrimony and pungency, stimulates the solids, and attenuates viscid juices; and hence stands deservedly recommended for exciting appetite, promoting digestion, increasing the fluid secretions, also in paralytic and rheumatic affections, and for the other purposes of the acrid plants called antiscorbutic.

tic. 'Some recommend it in the disease called *milreek*, to which smelters are subject.' It imparts its taste and smell in perfection to aqueous liquors, whilst rectified spirit extracts extremely little of either: the whole of the pungency arises with water in distillation. Committed to the press, it yields a considerable quantity of a soft insipid oil, perfectly void of acrimony: the cake left after the expression is more pungent than the mustard was at first. The oil is directed as an official [*L.*] These seeds are sometimes employed externally as a stimulant and a sinapism.

SISON, vide ANOMUM VULGARE.

SMYRNIUM, vide HIPPOSELINUM.

SOLANI VULGARIS, *folia*: *Solani hortensis seu vulgaris* J. B. *Solani nigri* Lin. Common nightshade; the leaves.

SOLANI LETHALIS, *seu Belladonna, folia*: *Solani melanocerasi* C. B. *Atropa Belladonna* Lin. Deadly nightshade; the leaves [*E.*]

These plants grow wild, the first in cultivated grounds, the second in shady waste ones. They have both been supposed cooling and discutient in external applications, and poisonous when taken internally. Late experience has shown, that an infusion of half a grain or a grain of the dried leaves of either may be taken with safety, and that in many cases the dose may be increased by degrees to five or six grains; that they generally occasion some considerable evacuation, and sometimes, especially in the larger of the above doses, alarming nervous symptoms, which however cease with the operation of the medicine. It has been expected, that a cautious use of these

very active plants would afford relief in some obstinate disorders: but though in some instances they promised great benefit, the general event of these trials has not been very favourable.

SOLANUM LIGNOSUM, vide DULCAMARA.

SOLDANELLA, vide BRASSICA MARINA.

SOPHIE CHIRURGORUM *semen*: *Nasturtii sylvestris tenuissime divisi* C. B. *Sisymbrii sophie* Lin. Fluxweed; the seeds.

This plant had formerly a great character as a vulnerary, and for stopping fluxes; but its effects have not been considerable enough to continue it in practice.

SORBI SYLVESTRIS *cortex*: *Sorbi sylvestris foliis domestica similis* C. B. *Sorbi aucuparia*. Wild service, or quicken tree; its bark.

The bark of this tree has a faint unpleasant smell, and a bitter taste; but is not regarded,

SPERMACETI *dictum* [*L.E.*] improperly so called: An unctuous flaky substance, of a snowy whiteness, a soft butyraceous taste, without any remarkable smell; obtained from the *Physter macrocephalus* Lin. The virtues of this concrete are those of a mild emollient: it is of considerable use in pains and erosions of the intestines, in coughs proceeding from thin sharp defluxions, and in general in all cases where the solids require to be relaxed, or acrimonious humours to be softened. For external purposes, it readily dissolves in oils; and for internal ones, may be united with aqueous liquors into the form of an emulsion, by the mediation of almonds, gums, or yolk of an egg. Sugar does not

render it perfectly miscible with water; and alkalis, which change other oils and fats into soap, have little effect upon sperma ceti. This drug ought to be kept very closely from the air; otherwise its white colour soon changes into a yellow, and its mild unctuous taste, into a rancid and offensive one. After it has suffered this disagreeable alteration, both the colour and quality may be recovered again by steeping it in alkaline liquors, or in a sufficient quantity of spirit of wine.

SPICA VULGARIS, vide **LA-
VENDULA ANGUSTIFOLIA**.

SPICA NARDI, vide **NARDUS
INDICA**.

‘ **SPIGELIÆ radix**: *Spigelia
Marilandica* Lin. Indian pink; the
root.

‘ It grows wild in the southern parts of North America. Some order it in doses of ten or fifteen grains; and allege it is apt to occasion nervous affections if given in large doses; while others order it in dram doses, alleging that the bad effects mentioned more readily happen from small doses, as the large ones often purge or puke; some prefer the form of infusion. A puke is generally premised; and its purgative effect assisted by some suitable additions.’

SPINÆ ALBÆ, seu *Oxyacanthæ vulgaris*, flores, bacca: *Mespili apii foliis, sylvestris, spinosæ sive oxyacanthæ* C. B. White-thorn, or hawthorn; its flowers and berries.

The reputation which these formerly had, in nephritic and calculous complaints, continues them in most catalogues of the *Materia Medica*, though common practice has long rejected them as insignificant.

The flowers have a very pleasant smell; the berries are mucilaginous and sweetish.

SPINÆ CERVINÆ bacca, baccharum succus: *Rhamni cathartici* C. B. et Lin. Buck-thorn; the berries [L.], the juice of the berries [E.]

This tree, or bush, is common in hedges: it flowers in June, and ripens its fruit in September or the beginning of October. In our markets, the fruit of some other trees, as the *frangula* or black berry-bearing alder, and the *cornus femina*, or dog-berry tree, have of late years been frequently mixed with or substituted for those of buckthorn. This abuse may be discovered by opening the berries: those of buckthorn have almost always four seeds, the berries of the *frangula* two, and those of the *cornus femina* only one. Buckthorn-berries, bruised on white paper, give it a green tincture, which the others do not. Those who sell the juice to the apothecaries, are said to mix with it a large proportion of water.

Buckthorn-berries have a faint disagreeable smell, and a nauseous bitter taste. They have long been in considerable esteem as cathartics; and celebrated in dropsies, rheumatisms, and even in the gout; though in these cases, they have no advantage above other purgatives, and are more offensive, and operate more churlishly, than many which the shops are furnished with: they generally occasion gripes, sickness, dry the mouth and throat, and leave a thirst of long duration. The dose is about twenty of the fresh berries in substance, and twice or thrice this number in decoction, an ounce of the expressed juice, or a dram of the dried berries. A syrup prepared from the juice is kept
in

in the shops; in this preparation the nauseous flavour of the buckthorn is somewhat alleviated by the sugar, and the addition of aromatics.

‘ **SPIRITUS CORNU CER-
VI**; *hoc est, Salis alkalini volatilis ex
offibus vel cornibus animalium parati,
portio volatiliior liquida bene rectificata
ut decolor sit*: Spirit of hartshorn;
This is the more volatile liquid
part of the volatile alkaline salt,
obtained from the bones and horns
of animals, well rectified so as to
become colourless [E.]

‘ The volatile alkali, as got by
distillation with a strong fire from
animal-matter, from soot, &c. is,
when pure, one and the same thing.
As first distilled, however, from the
subject, it is impregnated with its
oil, rendered fetid or empyreumatic
by the process. The oily volatile
alkali has been chiefly prepared
by distillation in large iron pots, with
a fire increased by degrees to a strong
red heat: a watery liquor rises first,
then the volatile salt, along with a
yellowish, and at length a dark
reddish oil; a part of the salt
dissolves in the water and forms the
spirit, which is considerably separated
from the oil by filtration
through wetted paper. It is rectified
by repeated distillations with
a very gentle heat. Greatest part
of the salt always comes over before
the water; a little of the salt is generally
allowed to remain undissolved as a
test of the strength of the spirit.
However colourless the salt or spirit
of hartshorn, soot, or such like, may
be thus rendered; yet by keeping
they become yellow and nauseous,
owing to a quantity of oil which
they still retain. The Edinburgh
College order this article to be got
from the manufacturer.

‘ The volatile alkali is got in its
purest state from sal ammoniac. It

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is used externally, held to the nose,
on account of its pungent odour, in
cases of faintishness and syncope, and
mixed with unctuous matter as a
rubefacient. It is used internally
to obviate spasm in hysteria, torpor
in hypochondriasis, and with a view
to excite the vis vitæ and diaphoresis
in low fevers.’

SPIRITUS VINOSUS RECTIFICATUS. Rectified spirit of
wine; “ a spirit distilled from wine
“ or other fermented liquors, purified
“ as much as possible from
“ its fetid smell, and the phlegm
“ that arises with it in the first distillation
[L.],” ‘ of which one
pound by weight shall contain thirteen
ounces by measure [E.]’ This
purification is effected by repeating
the distillation in a very gentle heat,
with certain additions to keep down
the phlegm and the gross oil in
which the ill flavour resides (see
Part III.) These spirits, whatever
vegetable subjects they have been
produced from, are, when perfectly
pure, one and the same. They have
a hot pungent taste, without any
particular flavour; they readily catch
flame, and burn entirely away,
without leaving any marks of an
aqueous moisture behind: distilled
by a heat less than that of boiling
water, they totally arise, the last
runnings proving as flavourless and
inflammable as the first: they dissolve
essential vegetable oils and resins
into a uniform transparent fluid.
These spirits are the lightest of
almost all known liquors: expressed
oils, which swim upon water, sink
in these to the bottom: a measure
which contains ten ounces by weight
of water, will hold little more than
eight and a quarter of pure spirit.

The uses of vinous spirits, as
menstrua for the virtues of other
medicines, we shall see hereafter,
Iago.

and in this place consider only their own. Pure spirit coagulates all the fluids of animal bodies, except urine, and hardens the solid parts. Applied externally, it strengthens the vessels, and thus may restrain passive hemorrhagies. It instantly contracts the extremities of the nerves it touches, and deprives them of sense and motion; by this means easing them of pain, but at the same time destroying their use. Hence employing spirituous liquors in fomentations (notwithstanding the specious titles of vivifying, heating, restoring mobility, resolving, dissipating, and the like, usually attributed to them) may sometimes be attended with unhappy consequences. These liquors received undiluted into the stomach, produce the same effects, contracting all the solid parts which they touch, and destroying, at least for a time, their use and office: if the quantity is considerable, a palsy or apoplexy follows, which end in death. Taken in small quantity, and duly diluted, they brace up the fibres, raise the spirits, and promote agility: if farther continued, the senses are disordered, voluntary motion destroyed, and at length the same inconveniencies brought on as before. Vinous spirits, therefore, in small doses, and properly diluted, may be applied to useful purposes in the cure of diseases; whilst in larger ones, or if their use is long continued, they act as a poison of a particular kind.

SPIRITUS VINOSUS TENUIOR [L. E.] Proof spirit:

"The same spirit, containing an admixture of an equal quantity of water: the best proof-spirit is that distilled from French wine; but for common uses may be employed the spirit drawn from melasses, or the syrupy matter

"that runs from sugar in the purification commonly called melasses spirit." [L.] The spirits usually met with under the name of *proof*, are those distilled from different fermented liquors, freed from their phlegm and ill-flavour only to a certain degree. Their purity with regard to flavour, may be easily judged from the taste, especially if the spirit be first duly diluted. It were to be wished that we had a certain standard with regard to their strength or the quantity of water contained in them; a circumstance which greatly influences sundry medicinal preparations, particularly the tinctures: for as pure spirit dissolves the resin and volatile oil, and water only the gummy and saline parts of vegetables, it is evident that a variation in the proportions wherein these are mixed, will vary the dissolving power of the menstruum, and consequently the virtue of the preparation. The common methods of estimating the quantity of phlegm contained in these spirits, are liable to uncertainty: it should therefore seem necessary for the nicer purposes, and where a perfectly flavourless proof-spirit is required, to make use of the pure rectified spirit, mixed with a certain determined proportion of water; equal quantities of these liquors, whether taken by weight or measure, compose a spirit somewhat weaker than what has been generally looked upon as proof: the exact proportions are, one hundred parts by weight of pure spirit, and eighty-six of water.

SPONGIA [L.] Sponge; a soft, light, very porous and compressible substance, readily imbibing water, and distending thereby. It is found adhering to rocks, particularly in the Mediterranean sea, about the islands of the Archipelago.

lago. It is generally supposed to be a vegetable production: nevertheless some observations, made by Jussieu, give room to suspect that it is of animal origin. Chemical experiments favour this supposition: analysed, it yields the same principles with animal substances in general: the volatile salt is in larger quantity than I have obtained from any animal-matter, except the bags of the silk-worm. On this salt, seem to depend the virtues of the officinal *spongia usta* [L.] (See Part III.). Crude sponge, from its property of imbibing and distending by moisture, is sometimes made use of as a tent for dilating wounds and ulcers.

It adheres strongly to the mouths of wounded vessels; and when retained by proper compression, it has prevented considerable bleedings preferably to agaric, puff-ball, &c. On account of the saline matter contained in burnt sponge, it has been used in scrophulous and other cutaneous affections, and in bronchocele.

STANNUM [L.], *stanni limatura et pulvis*: the filings and powder of tin [E.]

Tin is the lightest and easiest of fusion of all metals. Heated, it becomes so brittle as to fall in pieces by a blow; and by agitation (when just ready to melt) into a powder: hence the officinal method of pulverising this metal, to be described in its place. The proper menstruum of tin is the marine acid, or aqua regia. Vegetable acids likewise dissolve it in considerable quantity, though it has long been supposed not to be at all so soluble in them, unless previously well calcined.

With regard to the virtues of of this metal it was formerly accounted a specific in disorders of the uterus and lungs: a calx of tin

and antimony is still retained in some dispensatories, under the name of an *antibiotic*: but these are virtues to which it certainly has little claim. It has of late been celebrated on better foundation as an anthelmintic; and said to destroy some kinds of worms which elude the force of many other medicines: possibly the cause of this effect may be very different from what may be suspected, an admixture of a portion of arsenic.

Tin has a strong affinity with arsenic; insomuch, that when once united therewith, the arsenic, notwithstanding its volatility in other circumstances, cannot be totally expelled either by slow calcination, or by a vehement fire. Almost all the ores of tin contain more or less of this poisonous mineral, which is not entirely separable in the common processes by which the ores are run down, or the metal farther purified. Filings of tin held in the flame of a candle, emit a thick fume, smelling of garlic; which smell is universally held in mineral substances to be a certain criterion of arsenic. Hencel has discovered a method of separating actual arsenic from tin: this is effected by solution in aqua-regia and crystallisation. Mr Margraff has (in the Berlin Memoirs) given a farther account of this process; and relates, that from the tins usually reputed pure, he has obtained one-eighth their weight of crystals of arsenic. For the preparations of tin, see the Third Part of this work.

STAPHIDIS AGRIÆ *semen* C. B. *Delphinii platani folio* Tourn. *Delphintii staphidis agria* Lin. Stavescare; the seeds.

These are large rough seeds, of an irregularly triangular figure, of a blackish colour on the outside, and yellowish or whitish within: they

they are usually brought from Italy; the plant is not very common in this country, though it bears our severest colds. They have a disagreeable smell, and a very nauseous bitterish, burning taste. Stavesacre was employed by the ancients as a cathartic; but it operates with so much violence both upwards and downwards, that its internal use has been, among the generality of practitioners, for some time laid aside. It is chiefly employed in external applications for some kinds of cutaneous eruptions, and for destroying lice and other insects; in so much, that it has from this virtue received its name, in different languages; *herba pedicularis*, *herbe aux poux*, *lauskraut*, *lousewort*.

STERCUS *anseris*, *canit*, *columbæ*, *equi*, *ovis*, *pavonis*, *porci*. The dung of the goose, dog, pigeon, horse, sheep, peacock, hog. These fulsome medicines, which nothing but the most fantastic visionaries could have introduced, are now expunged from practice, and from our pharmacopœias.

STIBIUM, vide **ANTIMONIUM**.

STOECHAS, *Stachas purpurea* C. B. *Lavendula stachas* Lin. Arabian stechas, or French lavender-flowers [L.]

This is a shrubby plant, considerably smaller than the common lavender. The flowery heads are brought from Italy and the southern parts of France: they are very apt to grow mouldy in the passage; and even when they escape this inconvenience, are generally much inferior to those raised in our gardens. The best stechas which we receive from abroad, has no great smell or taste: Pomet affirms, that such as the shops of Paris are supplied with,

is entirely destitute of both; whilst that of our own growth, either whilst fresh or when carefully dried, has a very fragrant smell, and a warm, aromatic, bitterish, subacid taste; distilled with water, it yields a considerable quantity of a fragrant essential oil; to rectified spirit it imparts a strong tincture, which inspissated proves an elegant aromatic extract. This aromatic plant is rarely met with in prescription; the only officinal compositions which it is admitted into, are the mithridate and theriaca.

There is another plant called *stechas*, which from the beauty and durability of its flowers has of late years had a place in our gardens, and whose aromatic qualities render it worthy of one in the shops; this is the *elichrysium seu stachas citrina latiore folio* C. B. (*Gnaphalium arenarium* Lin.) golden stechas, goldilocks, or yellow cassidony; its flowers stand in umbels on the tops of the branches; they are of a deep shining yellow colour, which they retain in perfection for many years; their smell is fragrant and agreeable, somewhat of the musky kind; their taste warm, pungent, and subastrigent; they impart their flavour to water in distillation, and by infusion to rectified spirit.

STRAMONII *herba*. *Datura stramonii* Lin. Thorn apple; the herb [E.]

'This narcotic plant is sometimes found wild among rubbish, grows in gardens, and flowers in July. An extract from the acrid expressed juice of the leaves, from one to five grain doses, twice or thrice a-day, is recommended in various nervous diseases; as mania, epilepsy, &c. and an ointment of the leaves is spoken of in external inflammation and hemorrhoids.'

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STYRAX-CALAMITA: *Resina styracis officinalis* Lin. [L. E.] Storax; an odoriferous resinous substance, exuding, in the warmer climates, from a tree called by C. Bauhine *styrax folio mali cotonei*. It has been customary to distinguish three sorts of storax, tho' only one is usually met with in the shops.

1. *Styrax calamita*, or *storax in the cane*, so called from its having been formerly brought inclosed in reeds from Pamphylia. It is either in small distinct tears, of a whitish or reddish colour, or in larger masses composed of such.

2. *Storax in the lump*, or *red storax*. This is in masses of an uniform texture and yellowish red or brownish colour; though sometimes likewise interspersed with a few whitish grains. Of this sort there has been some lately to be met with in the shops, under the name of *storax in the tear*.

3. The *common storax* of the shops is in large masses, considerably lighter and less compact than the foregoing: it appears upon examination to be composed of a fine resinous juice, mixed with a quantity of sawdust. For what purpose this addition is made, I shall not here inquire; observing only, that it can scarce be supposed to be done with any fraudulent view, since the sawdust appears at sight. This common storax is much less esteemed than the two first sorts; though, when freed from the woody matter, it proves superior in point of fragrance to either of them. Rectified spirit, the common menstruum of resins, dissolves the storax, leaving the wood behind: nor does this tincture lose considerably of its valuable parts, in being inspissated to a solid consistence; whilst aqueous liquors elevate almost all the fragrance of the storax.

Storax is one of the most agreeable of the odoriferous resins, and may be exhibited to great advantage in languors and debilities of the nervous system; it is not however much used in common practice, unless as an ingredient in the traumatic balsam, the compound powder and electary of scordium, the storax pill, confectio Paulina, mithridate, and theriaca [L.]

STYRAX LIQUIDA: Liquid storax. 'It is the resinous juice of a large tree, the *liquidamber styraciflua* Lin.' What is most commonly met with under this name, is a soft resinous substance, of a grey colour, a weak smell, similar to that of the foregoing solid storax: it is supposed to be compounded of solid storax, resin, wine, and oil, beaten up together into a proper consistence. The genuine liquid storax, according to Petiver's account (Phil. Transact. N^o 313.) is obtained from a tree growing in the island Cobros in the Red Sea: the preparers of this commodity yearly clear off the bark of the tree, and boil it in sea-water to the consistence of bird-lime; the resinous matter which floats upon the surface is taken off, liquified again in boiling water, and passed through a strainer. The purer part which passes through, and the more impure which remains on the strainer and contains a considerable portion of the substance of the bark, are both sent to Mocca; from whence they are sometimes, though very rarely, brought to us. The first is of the consistence of honey, tenacious, of a reddish or ash brown colour, an acrid unctuous taste, approaching in smell to the solid storax, but so strong as to be disagreeable: the other is full of woody matter, and much weaker in smell.

Liquid storax is among us scarce ever

ever made use of in medicine, and not often found in the shops; hence the London College has expunged it from the catalogue of officinals.

SUBER: *cortex Suberis latifolii perpetuo virentis C. B. Querci suberis Lin.* Cork, a sort of evergreen oak, growing in the warmer parts of Europe; its bark. This has been by some accounted astringent, and recommended as such in dysenteries and other fluxes; but modern practice applies it to no such uses, and expects from it no virtues of any kind.

It may here be proper to take notice, that sundry liquors undergo sensible alteration from cork stoppers. Neumann observes, that acids, alkalis both fixed and volatile, the dulcified alkaline and acid spirits, some neutral saline liquors, lime-water, blue vegetable juices, and syrups made from them, are changed more or less to a yellow or brown colour.

SUCCINUM [L. E.] Amber; a solid, brittle, bituminous substance, dug out of the earth, or found upon the sea shores: the largest quantities are met with along the coasts of Polish Prussia and Pomerania. It is of a white yellow, or brown colour, sometimes opaque, and sometimes very clear and transparent. The dark-coloured and opaque sorts, by digestion with certain expressed oils and animal fats, become clearer, paler coloured, more pellucid, and considerably harder. Amber boiled in water, neither softens nor undergoes any sensible alteration: exposed to a greater heat, without addition, it melts into a black mass like some of the more common bitumens: set on fire, its smell resembles that which arises from the finer kinds of pitcoal: distilled in a

retort, it yields an oil and a volatile acidulous salt. See Part III.

Amber in substance has very little smell or taste; and hence it has by some been reckoned a mere inactive earthy body. It was formerly accounted an absorbent, and as such had a place in the compound powder of crabs-claws: it certainly has no title to this class of medicines, as not being acted upon by any acid. It is supposed to be of service in the fluor albus, gleet, hysteric affections, &c.; and in these intentions is sometimes given in the form of impalpable powder, to the quantity of a dram. A tincture of amber made in rectified spirit (to which it imparts a bitterish aromatic taste and a fragrant smell), promises to be of real service in these disorders. Boerhaave extols this tincture as having incredible efficacy in all those distempers which proceed from weakness and relaxation, and in hypochondriacal, hysteric, and cold languid cases. If part of the spirit be abstracted by a gentle heat, the remainder proves a very elegant aromatic balsam, which is perhaps one of the most useful preparations obtainable from this concrete. Amber is levigated in the shops into an impalpable powder, which gives name to a compound powder [L.], and is an ingredient in mithridate and theriaca [L.]; and the distilled oil and salt [L. E.] are likewise officinals. 'It is also an ingredient in the gum pills [E.]'

SUCCISA, vide MORSUS DIABOLI.

SULPHUR [L.] *Sulphuris flores*; Flowers of sulphur [E.] Sulphur or brimstone is a yellow substance, of the mineral kingdom, fusible in a small degree of heat, totally volatile in a stronger, readily inflammable, burning with a blue

flame which is accompanied with a suffocating acid fume. It dissolves in alkaline liquors and in oils; not in acids, water, or vinous spirits.

Greatest part of the sulphur met with in the shops, is obtained from certain ores by a kind of distillation, or artificially composed by uniting the vitriolic acid with inflammable matters. At some of the Saxon sulphur-works (from whence we are chiefly supplied) certain minerals abounding with vitriolic acid, but containing little or no sulphur, being stratified with wood, and the latter set on fire, a large quantity of fine sulphur is produced. It is usually brought to us in large irregular masses, which are afterwards melted and cast into cylindrical rolls with the addition of some coarse resin, flower, or the like; whence the paler colour of the rolls. Sulphur is also not unfrequently found native in the earth, sometimes in transparent pieces of a greenish or bright yellow colour; but more commonly in opaque grey ones, with only some streaks of yellow. This last is the sort which is understood by the name *sulphur vivum* [E.]; though that met with under this name in the shops, is no other than the dross remaining after the sublimation of sulphur. All the sorts of sulphur are, when perfectly pure, in no respect different from one another. Notwithstanding the preference given by some to the more uncommon fossil sorts; these last are of all others the least proper for medicinal purposes, as being the most subject to an admixture of foreign matter both of the metallic and arsenical kind.

Pure sulphur loosens the belly, and promotes insensible perspiration: it seems to pass through the whole habit, and manifestly transpires through the pores of the

skin, as appears from the sulphureous smell of persons who have taken it, and silver being stained in their pockets of a blackish colour, which is the known effect of sulphureous fumes. It is a celebrated remedy against cutaneous diseases, both given internally and externally applied. It has likewise been recommended in coughs, asthma, and other disorders of the breast and lungs: In these cases, however, it has no very considerable effect, unless, as Hoffman observes, where the disease proceeds from the blood being tainted by scrophulous or scorbutic humours; where this happens, the prudent use of sulphur is said to do good service, throwing out a plentiful eruption upon the skin, and by degrees carrying off the peccant matter. The common dose of sulphur rarely exceeds a scruple, though Geoffroy goes as far as two drams. The *trochisci sulphure* of the dispensatory are one of the most elegant forms for the taking of it. It enters six officinal preparations for external use, and gives name to one of them. Some have imagined that sulphur used externally is dangerous; that as it throws the morbid matter outwards when given inwardly, it must in like manner drive it into the blood when applied externally. This opinion, which is supported by some late writers, has no just foundation. Sulphur has nearly the same effects, whether used internally or externally: in both cases, the eruptions become frequently more copious after the first use of it.

It is remarkable of this concrete, that though itself a medicine of considerable efficacy, it nevertheless restrains that of some others of the most powerful kind, Mercury is rendered, by the admixture of sulphur,

phur, inactive; and the virulent antimonial regulus almost so. Hence, when antimonial and mercurial medicines exceed in operation, sulphur has been given for abating their violence; and sometimes restrains their further action. Even the corrosive poison arsenic, by the addition of sulphur, becomes almost innocent; and hence, if a small proportion of arsenic should be contained in sulphur, it possibly may not receive from thence any poisonous qualities.

SUMACH *folia, semen: fruticis quæ Rhus folio ulmi C. B. Rhus coriariæ Lin.* Common sumach; the leaves and seeds.

This tree, or shrub, is cultivated in some places on account of the culinary uses of its fruits, and for the purposes of the dyers, &c. among us, it is met with only in the gardens of the curious. The seeds or berries are of a red colour, in shape round and flat. Both these and the leaves are moderately astringent, and have sometimes been exhibited in this intention, but are now become strangers to the shops.

SYMPHYTUM, vide **CONSOLIDA.**

TACAMAHACA: a resin obtained from a tall tree (*tacamahaca populo similis, fructu colore pæoniæ simili J. B. Populus balsamifera Lin.*) which grows spontaneously on the continent of America, and in a sheltered situation bears the winters of our own climate. Two sorts of this resin are sometimes to be met with. The best, called (from its being collected in a kind of gourd-shells) *tacamahaca in shells*, is somewhat unctuous and softish, of a pale yellowish or greenish colour, an aromatic taste, and a fragrant delight-

ful smell, approaching to that of lavender and amberggris. This sort is very rare: that commonly found in the shops is in semitransparent grains or glebes, of a whitish, yellowish, brownish, or greenish colour, of a less grateful smell than the foregoing. The first is said to exude from the fruit of the tree, the other from incisions made in the trunk. This resin is said to be employed among the Indians, externally, for discussing and maturing tumours, and abating pains and aches of the limbs: it is an ingredient in the anodyne, hysteric, cephalic, and stomachic plasters of the Edinburgh pharmacopœia. The fragrance of the finer sort sufficiently points out its being applicable to other purposes.

TAMARINDI *fructus: Tamarindi indicæ Lin.* Tamarind; the fruit [*L. E.*] of a tree growing in the East and West Indies, called by *C. Bauhine filiqua Arabica quæ tamarindus*. It is a pod resembling a bean cod, including several hard seeds, together with a dark coloured viscid pulp of a pleasant acid taste: the East India tamarinds are longer than the West India sort; the former containing six or seven seeds each, the latter rarely above three or four. The pulp of these fruits, taken in the quantity of two or three drams, or an ounce or more, proves gently laxative or purgative; and at the same time, by its acidity, quenches thirst, and allays immoderate heat. It increases the action of the purgative sweets, cassia and manna, and weakens that of the resinous cathartics. Some have supposed it capable of abating the virulence of antimonial preparations; but experience shows, that it has rather a contrary effect, and that all vegetable acids augment their power. Tamarinds are an ingredient

dient in the electary of casia [L.], the lenitive electary [E.], and decoction of tamarinds with fenna [E.]

TAMARISCI *folia, cortex: Tamaricis alterius folio tenuiore, sive Gallicæ C. B.* The tamarisc tree; its bark and leaves.

These are moderately astringent: they are never met with in prescription, and have long been entire strangers to the shops.

TANACETI *folia, flores: Tanacetii vulgaris lutei C. B. Tanacetii vulgaris Lin.* Tansey; the leaves [L. E.], and flowers [E.]

Tansey grows wild by road sides and the borders of fields, and is frequently also cultivated in gardens both for culinary and medicinal uses: it flowers in June and July. Considered as a medicine, it is a moderately warm bitter, accompanied with a strong, not very disagreeable flavour: some have had a great opinion of it in hysteric disorders, particularly those proceeding from a deficiency or suppression of the uterine purgations. The leaves and seeds have been of considerable esteem as anthelmintics; the seeds are less bitter, and more acrid and aromatic, than those of rue, to which they are reckoned similar; or of santonicum, for which they have been frequently substituted.

TAPSI BARBATI *seu Verbasci folia: Verbasci maris latifolii lutei C. B. Verbasci thapsi Lin.* Mullein; the leaves [E.]

This is met with by road-sides, and under hedges: it is cloathed all over with soft downy leaves, and produces long spikes of yellow flowers in July. The taste discovers in it a glutinous quality; and hence it stands recommended as an

emollient, and is in some places held in great esteem in consumptions. The flowers of mullein have an agreeable, honey-like sweetness; an extract prepared from them by rectified spirit of wine, tastes extremely pleasant.

Some recommend the external use of mullein, in form of decoction, in ill-conditioned ulcers.

TARAXACUM, *vide DENS LEONIS.*

TARTARUM [L.] Tartar is a saline substance, 'consisting of the vegetable alkali supersaturated with acid,' thrown off from wines to the sides and bottom of the cask: 'In this state it is mixed with earthy, oily, and colouring matter; and when it has a deep brown colour, as that from red wine, it is commonly called *red*, and when of a paler colour, *white tartar*. It is purified by dissolving it in boiling water, and separating the earthy part by filtering the boiling solution. On cooling the solution, it deposits irregular crystals, containing the oily and colouring matters, which are separated by boiling the mass with a white clay. The tartar thus purified, may be crystallised; or if in powder, is called *cream of tartar*. If this be exposed to a red heat, its acid flies off; and what remains is the vegetable alkali, or salt of tartar. If we add lime to a boiling solution of pure tartar, the lime falls down with the acid, and the pure alkali swims in the water above. The lime is separated by any acid of a stronger attraction to it, as the vitriolic acid, which is added in a diluted state, the whole stirred for some time, and strained off; the acid of tartar passes through, and may be had by evaporation in the form of rhomboidal crystals. The

solubility of tartar in water is much promoted by borax.

The virtues of tartar are those of a mild, cooling, aperient, laxative medicine. 'It is much used in dropfy; and some allege good effects from it, as a deobstruent, in dropfy from schirrus.' Taken from half an ounce to an ounce, it proves a gentle, though effectual purgative: Angelus Sala relates, that he was cured of an habitual colic by purging himself a few times with six drams of the crude salt, after many other medicines had been tried to no purpose. For the preparations of tartar, see Part III. This salt is likewise an ingredient in the compound infusion of fenna, compound powder of fenna [L.], and is used for dissolving or corroding some metallic bodies, particularly antimony, from which it receives a strong emetic impregnation, as in the preparation called *emetic tartar*.

TELEPHIUM, vide CRASSULA.

TEREBINTHINÆ. Turpentine; resinous juices extracted from certain trees. There are four kinds of turpentine distinguished in the shops.

TEREBINTHINA CHIA, sive CYPRIA [L.] Chian or Cyprus turpentine, is the produce of the *Terebinthus vulgaris* G. B. the *pistachia terebinthus* Lin. An evergreen tree or shrub, which grows spontaneously in the warmer climates, and endures the colds of our own.

This juice is generally about the consistence of thick honey, very tenacious, clear and almost transparent, of a white colour, with a cast of yellow, and frequently of blue: it has a warm, pungent, bitterish taste;

and a fragrant smell, more agreeable than any of the other turpentine.

The turpentine brought to us, is extracted in the islands whose names it bears, by wounding the trunk and branches a little after the buds have come forth: the juice issues limpid, and clear as water, and by degrees thickens into the consistence in which we meet with it. A like juice exuding from this tree in the eastern countries, inspissated by a slow fire, is of frequent use, as a masticatory, among the Persian ladies, who (as Kæmpfer informs us) are continually chewing it, in order to fasten and whiten the teeth, sweeten the breath, and promote appetite.

TEREBINTHINA VENETA [E.] Venice turpentine.

This is usually thinner than any of the other sorts, of a clear, whitish, or pale yellowish colour, a hot, pungent, bitterish, disagreeable taste, and a strong smell, without any thing of the fine aromatic flavour of the Chian kind.

The true Venice turpentine is obtained from the *larix folio deciduo conifera* J. B. (*Pinus larix* Lin.) larch, a large tree growing in great abundance upon the Alps and Pyrenean mountains, and not uncommon in the English gardens. What is usually met with in the shops, under the name of Venice turpentine, comes from New England; of what tree it is the produce, we have no certain account: the finer kinds of it are in appearance and quality not considerably different from the true sort above described.

TEREBINTHINA ARGENTORATENSIS [L.] Strasburgh turpentine.

This, as we generally meet with it, is of a middle consistence betwixt the two foregoing, more transparent,

and less tenacious than either; its colour a yellowish brown. Its smell is very fragrant, and more agreeable than that of any of the other turpentine, except the Chian; in taste it is the bitterest, yet the least acrid.

This resin is obtained from the two sorts of fir trees mentioned in page 65, which are the most plentiful, and perhaps the only ones that grow spontaneously in Europe. There is another whose resin is much superior to the common turpentine, and has sometimes been brought to us from abroad under the name of *BALSAMUM CANADENSE*. This species is the *Abies minor, pectinatis foliis, Virginiana, conis parvis, subrotundis* Pluk. (*Pinus balsamea* Lin.) Virginian, or Canada fir; though not a native of this climate, it has been found to endure its severest colds.

TEREBINTHINA COMMUNIS [L.] Common turpentine is the coarsest, heaviest, in taste and smell the most disagreeable, of all the sorts: it is about the consistence of honey, of an opaque brownish white colour.

This is obtained from the *pinus sylvestris* C. B. et Lin. wild pine, a low unhandsome tree, common in different parts of Europe; this tree is extremely resinous, and remarkably subject to a disease from a redundancy and extravasation of its resin, inasmuch that, without due evacuation, it swells and bursts. The juice as it issues from the tree is received in trenches made in the earth, and afterwards freed from the grosser impurities by colature through wicker baskets.

All these juices yield in distillation with water an highly penetrating essential oil, a brittle insipid resin remaining behind. With regard to their medical virtues, they

promote urine, cleanse the parts concerned in the evacuation thereof, and deterge internal ulcers in general; and at the same time, like other bitter hot substances, strengthen the tone of the vessels: they have an advantage above most other acrid diuretics, that they gently loosen the belly. They are principally recommended in gleets, the fluor albus, and the like; and by some in calculous complaints: where these last proceed from sand or gravel, formed into a mass by viscid mucous matter, the turpentine, by dissolving the mucus, promote the expulsion of the sand; but where a calculus is formed, they can do no service, and only ineffectually irritate or inflame the parts. In all cases accompanied with inflammation, these juices ought to be abstained from, as this symptom is increased, and not unfrequently occasioned by them. It is observable, that the turpentine impart, soon after taking them, a violet smell to the urine; and have this effect though applied only externally to remote parts; particularly the Venice sort. This is accounted the most powerful as a diuretic and detergent; and the Chian and Strasbourg as corroborants: the Strasbourg is an ingredient in the mercurial pills and Locatellus's balsam; and the Chian in mithridate and theriaca.

[L.] The common turpentine, as being the most offensive, is rarely given internally, its principal use is in plasters and ointments among farriers, and for the distillation of the oil, or spirit, as it is called. The dose of these juices is from a scruple to a dram and a half: they are most commodiously taken in the form of a bolus, or dissolved in watery liquors by the mediation of the yolk of an egg or mucilage. Of the distilled oil, a few drops are a sufficient dose: this is a most potent,

stimu-

stimulating, detergent diuretic, oftentimes greatly heats the constitution, and requires the utmost caution in its exhibition.

TERRA JAPONICA, vide JAPONICA.

TERRA LEMNIA et SILESIACA, vide BOLUS.

THAPSIÆ folia: *Thapsia* *fruticosa* *garganica* *semine latissimo* J. B. Deadly carrot; the root. This plant does not ill deserve its epithet; a small dose operating with extreme violence both upwards and downwards. It is an entire stranger to the shops, and met with only in the gardens of the curious.

THEÆ folia [E.] Tea; the leaves of a shrub (*thea frutex*, *folia cerasi*, *flore rosæ sylvestris*, &c. *Kempf.*) *Thea bohea et viridis* Lin. cultivated in China.

The several sorts of tea met with among us, are the leaves of the same plant, collected at different times, and cured in a somewhat different manner: the small young leaves very carefully dried, are the finer green; the older afford the ordinary green and bohea. The two first have a sensible flavour of violets; the other of roses: the former is the natural odour of the plant; the latter, as Neumann observes, is probably introduced by art: some of the dealers in this commodity in Europe, are not ignorant that bohea tea is imitable by the leaves of certain common plants, artificially tinctured and impregnated with the rose flavour. The taste of both sorts is lightly bitterish, subastringent, and somewhat aromatic. The medical virtues attributed to these leaves are sufficiently numerous, though few of them have any just foundation: little more can be expected from the common in-

fusions than that of a diluent, acceptable to the palate and stomach: the diuretic, diaphoretic, and other virtues which they have been celebrated for, depend more on the quantity of warm fluid, than any particular qualities which it gains from the tea. Nothing arises in distillation from either sort of tea with rectified spirit; water elevates the whole of their flavour.

‘Good tea, in a moderate quantity, seems to stimulate, refresh, and strengthen; but if taken in a recent highly flavoured state, and in considerable quantity, its use is apt to be succeeded by weakness and tremours.’

THLAPSIS semen. Treacle, or mithridate mustard; the seeds [L.]

Two sorts of thlapsi are used promiscuously; *thlapsi arvense siliquis latis* C. B. and the *thlapsi arvense vaccariæ incano folio majus* C. B. they both grow wild, the latter most plentifully. These seeds have an acrid biting taste like common mustard, with which they agree in medical qualities; their principal use is as ingredients in the compositions whose name they bear.

THUS MASCULUM, vide OLIBANUM.

THUS VULGARE [L. E.] Common frankincense; a solid, brittle resin, brought to us in little glebes or masses, of a brownish or yellowish colour on the outside, internally whitish or variegated with whitish specks; of a bitterish, acrid, not agreeable taste, without any considerable smell. It is supposed to be the produce of the pine tree which yields the terebinthina communis; and to concrete on the surface of the terebinthinate juice soon after it has issued from the plant.

It is an ingredient in mithridate, the

the gum plaster, strengthening plaster, and stomach plaster [L.]

THYMI herba : *Thymi vulgaris folio tenuiore C. B. Thymi vulgaris Lin.* Common thyme; the herb [E.]

This plant is frequent in our gardens, and flowers in June and July. It has an agreeable aromatic smell, and a warm pungent taste; which it imparts by infusion to rectified spirit, and sends over in distillation with water; along with the water arises an essential oil, extremely hot and pungent.

THYMI CITRATI folia : *Serpilli foliis citri odore C. B. Thymi serpylli Lin.* Lemon-thyme; the leaves [L.]

This is found wild in dry mountainous places, but the shops are supplied from gardens. In taste and smell it is less acrid and more grateful than the common thyme; its smell, in particular, is remarkably different, approaching to that of lemons. It gives over its flavour in distillation both with water and spirit: with the former an elegant essential oil arises: the distilled spirit is an agreeable aromatic cordial liquor, not inferior to any thing of this kind.

THYMELEÆE bacca : *Thymelææ foliis lini C. B. Daphnes Gnidii Lin.* Spurge flax; its berries, called *grana cnidia*.

TITHYMALI radix. Spurge; the root.

Several sorts of spurge are mentioned in catalogues of the materia medica. Both the Edinburgh and London colleges have now rejected them all.

The spurges and *grana cnidia* are extremely acrid, irritating cathartics,

and operate with so much violence as to be altogether unfit for internal use.

TILIE flores : *Tilia fœminæ olio majore C. B. Tilia Europææ Lin.* The lime or linden tree; its flowers [L.]

The lime tree has been much valued on account of its quick growth and pleasant shade; it flowers in July, and loses its leaves soon after. The flowers are made use of chiefly on account of their agreeable flavour, which water extracts from them by infusion, and elevates in distillation. Among the writers on the materia medica, they have the character of an antiepileptic, and a specific in all kinds of spasms and pains. Frederick Hoffman relates, that he knew a chronical epilepsy cured by the use of an infusion of these flowers drank as tea.

TINCAR, vide BORAX.

TORMENTILLÆ radix : *Tormentillæ silvestris C. B. Tormentillæ erectæ Lin.* Tormentil, or septfoil; the root [L. E.]

Tormentil is found wild in woods and on commons: it has long slender stalks, with usually seven long narrow leaves at a joint; the root is for the most part crooked and knotty, of a blackish colour on the outside, and reddish within. This root has an austere styptic taste, accompanied with a slight kind of aromatic flavour; it is one of the most agreeable and efficacious of the vegetable astringents, and is employed with good success in all cases where medicines of this class are proper. It is more used, both in extemporaneous prescription and in officinal composition, than any of the other strong vegetable astringents: it is an ingredient in the two compound powders of bole [L.], the two powders and elec-

electary of scordium [L.], the japonic confection [E]. A tincture made from it with rectified spirit possesses the whole astringency and flavour of the root, and loses nothing of either in inspissating.

TRAGACANTHA, vide GUMMI TRAGACANTHA.

TRICHOMANIS *folia, herba*: *Trichomanis sive polytrichi officinarum* C. B. *Asplenii trichomanis* Lin. English maidenhair; the leaves [L.], and herb [E.]

This is one of the herds called, from the smallness of their stalks, capillary: it is found wild in different parts of England, upon old walls, and in shady places. The leaves have a mucilaginous, sweetish, subastringent taste, without any particular flavour; they are esteemed useful in disorders of the breast, proceeding from a thickness and acrimony of the juices; and are likewise supposed to promote the expectoration of tough phlegm, and to open obstructions of the viscera. They are usually directed in infusion or decoction, with the addition of a little liquorice. A syrup prepared from them has frequently supplied the place of that made from the adianthum verum: some have substituted a still cheaper ingredient, and perhaps not much to the disadvantage of the medicine; both the maidenheads yielding little more than a mucilaginous juice, greatly resembling the substitute made use of. The syrup brought from abroad has an admixture of orange-flower water.

TRIFOLII PALUDOSI *folia*: *Trifolii palustris* C. B. *Menyanthis trifoliata* Lin. Marsh-trefoil, or buck-beans; the leaves [L. E.]

This plant grows wild in moist

marshy places; it has three oval leaves, standing together upon one pedicle which issues from the root; their taste is very bitter, and somewhat nauseous. Marsh trefoil is an efficacious aperient and deobstruent, promotes the fluid secretions, and, if liberally taken, gently loosens the belly. Some recommend it in scrophulous disorders and other ill-conditioned ulcers; inveterate cutaneous diseases have been removed by an infusion of the leaves drank to the quantity of a pint a-day at proper intervals, and continued some weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

TRISSAGO, vide CHAMÆDRYS.

TRITICI *farina, amyllum, farfur*: *Tritici vulgaris glumas trititando deponentis* J. B. *Tritici aestivi* Lin. Wheat; the meal or flour, and starch [L. E.] (prepared from the meal by maceration in fresh quantities of water.)

Wheat, a common article of our food, is more glutinous and nutritious than most other kinds of grain. The flour, or the starch prepared from it, form with water a soft viscid substance, which has been taken with good success in diarrhœas and dysenteries. Starch is an ingredient in the compound powder of gum tragacanth and the white pectoral troches [L.]

Bran contains, besides the husks or shells of the wheat, a portion of its farinaceous matter: This is less glutinous than the finer flour, and is supposed to have a detergent quality. Infusions of bran are not unfrequently employed in this intention externally, and sometimes likewise taken inwardly.

BREAD,

BREAD, carefully toasted, and infused, or lightly boiled in water, imparts a deep colour, and a sufficiently agreeable restraining taste. This liquor, taken as common drink, has done good service in a weak lax state of the stomach and intestines; and in bilious vomiting and purging, or the cholera morbus. Examples are related in the Edinburgh Essays of several cases of this kind cured by it, without the use of any other medicine.

When a farinaceous powder is steeped in cold water and strained through a cloth, a glutinous part remains in the cloth, which some suppose to be the nutrient principle, as it is quite similar to animal jelly: a starch passes through with the water, settles at the bottom, and a sweet mucilage is kept dissolved in the water. It is probably the just proportion of these three ingredients in wheat, that gives that grain a preference in diet over the rest. The gluten is insoluble in water; but when mixed with the other two, and seasoned with salt, in that state made to ferment by yeast or leaven, and this fermentation checked by the heat of the oven, the ingredients become so intimately united, that they cannot be separated; the viscosity of the gluten is diminished, and the whole thus forms a very soluble and nutritious bread.

TUNICA, vide CARYOPHYLLUS HORTENSIS.

TURPETHI radix: *Convolvuli turpethi* Lin. Turbith; the cortical part of the root of an Indian convolvulus, brought to us in oblong pieces, of a brown or ash-colour on the outside, and whitish within. The best is ponderous, not wrinkled, easy to break, and discolours

vers a large quantity of resinous matter to the eye: its taste is at first sweetish; chewed for a little time, it becomes acrid, pungent, and nauseous. This root is a cathartic, not of the safest or most certain kind. The resinous matter, in which its virtue resides, appears to be very unequally distributed, in so much that some pieces, taken from a scruple to a dram, purge violently; while others, in larger doses, have scarce any effect at all. An extract made from the root is more uniform in strength, though not superior or equal, to purgatives more common in the shops.

TUSSILAGINIS *five farfara folia, flores: Tussilaginis vulgaris* C. B. *Tussilaginis farfara* Lin. Coltsfoot: the leaves and flowers [E.]

This grows wild in watery places, producing yellow flowers in February and March; these soon fall off, and are succeeded by large roundish leaves, hairy underneath: their taste is herbaceous, somewhat glutinous, and subacid. Tussilago stands recommended in coughs, phthisis, and other disorders of the breast and lungs, and some use it in scrophula.

TUTIA [L. E.] Tutty; an impure sublimate of zinc, or an argillaceous substance impregnated therewith, formed into tubulous pieces like the bark of a tree. It is moderately hard and ponderous; of a brownish colour, and full of small protuberances on the outside, smooth and yellowish within; some pieces have a blueish cast, from minute globules of zinc being thrown up by the heat in its metallic form. Tutty is celebrated as an ophthalmic, and frequently employed as such in unguents and collyria: it gives name to an officinal ophthalmic

mic ointment [L. E.] See the article ZINCUM.

VALERIANÆ HORTENSIS MAJORIS *radix: Valeriana majoris odorata radice J. B.* The greater garden valerian; its roots.

This is an oblong wrinkled root, with several fibres at the bottom, of a brownish or ash colour on the outside, and whitish within; of an aromatic smell and taste, approaching to nard. It is accounted less efficacious as a medicine than the following.

VALERIANÆ SILVESTRI *radix: Valeriana sylvestris majoris montana C. B. Valeriana sylvestris majoris foliis angustioribus Morison. plant. umbellif. Valeriana officinalis Lin.* Wild valerian (the narrow-leaved sort growing on open, dry, mountainous places); its roots [L. E.]

This root consists of a number of strings or fibres matted together, issuing from one common head; of a whitish or pale brownish colour: its smell is strong, like a mixture of aromatics with fetids; the taste unpleasantly warm, bitterish, and subacid. There is another wild valerian, with broader leaves, of a deeper and shining green colour, met with in watery places. Both sorts have hitherto been used indiscriminately; and Linnæus has joined them into one species, under the name of *valeriana foliis omnibus pinnatis*. Our college have restrained the shops to the first, which is considerably the strongest, and loses of its quality if transplanted into such soils as the other naturally delights in. The roots, produced in low watery grounds, have a remarkably faint smell in comparison of the others, and sometimes scarce any at

all. Wild valerian is a medicine of great use in nervous disorders, and is particularly serviceable in epilepsies proceeding from a debility of the nervous system. It was first brought into esteem in these cases by Fabius Columna, who by taking the powdered root in the dose of half a spoonful, was cured of an inveterate epilepsy, after many other medicines had been tried in vain. Repeated experience has since confirmed its efficacy in this disorder; and the present practice lays considerable stress upon it. The common dose is from a scruple to a dram; in infusion, from one to two drams. Its unpleasant flavour is most effectually concealed by a suitable addition of mace.

‘In the Edinburgh Dispensary, in cases of epilepsy in which there was no evidence of local affection, it has been given to the extent of two ounces a day without effect. Some recommend it as useful in procuring sleep, particularly in fever, even when opium fails.’

A tincture of valerian in proof spirit and in volatile spirit are kept in the shops [L.], and is an ingredient in mithridate and theriaca [L.]

VERATRUM, vide **HELLEBORUS ALBUS**.

VERBASCUM, vide **TAPAEUS BARBATUS**.

VERBENÆ *folia, radix: Verbenæ communis flore cerulæ C. B. Verbenæ officinalis Lin.* Common wild vervain; the leaves and root.

This is one of the medicines which we owe to the superstition of former ages; the virtues it has been celebrated for, both as an internal medicine, and externally as an amulet, are extremely numerous: and possibly it has an equal title to them

them all. To the taste and smell it appears almost simply herbaceous.

VERONICA FOEMINA, vide **ELATINE**.

VERONICÆ MARIS, seu *Betonica Pauli folia*: *Veronica maris supina et vulgatissima* C. B. *Veronica officinalis* Lin. Male speedwell; the leaves.

This is one of the veronica which produce their flowers in clusters at the joints of the stalks: it is a rough procumbent plant, not unfrequently met with on dry commons, and in sandy grounds. In taste, smell, and medical virtues, it is similar to the betonica, of which in its place: though the veronica is commonly supposed to have more of an aperient and pectoral virtue, and betony to be rather nervine and cephalic. Hoffman and Joh. Francus have written express treatises on this plant, recommending infusions of it, drank in the form of tea, as very salubrious in many disorders, particularly those of the breast.

VINCETOXICI, *Asclepiadis, seu Hirundinaria, radix*: *Asclepiadis flore albo* C. B. *Asclepiadis vintoxici* Lin. Swallow-wort, or tame poison; the root.

This is a native of the warmer climates: It is sometimes met with in our gardens, but rarely perfects its seeds. It is reckoned by botanists a species of apocynum, or dogbane; from all the poisonous sorts of which it may be distinguished, by yielding a limpid juice, whilst that of the others is milky. The root has a strong smell, especially when fresh, approaching to that of valerian, or nard; the taste is at first sweetish and aromatic, but soon becomes bitterish, subacid, and nauseous. This root is esteemed sudorific, diuretic, and emmenagogue, and frequently employed by the French

and German physicians as an alexipharmac, sometimes as a succedaneum to contrayerva; whence it has received the name of *contrayerva Germanorum*. Among us it is very rarely made use of. It appears from its sensible qualities to be a medicine of much the same kind with valerian, which is indisputably preferable to it.

VINUM. Wine; the fermented juice of the grape. Among the great variety of wines in common use among us, four are employed in the shops as menstrua for medicinal simples.

Vinum album [L.], *vinum album Hispanum* [E.], Mountain.

Vinum Canarium [L.], Canary or sack.

Vinum Rhenanum [L. E.], Rhenish.

Vinum rubrum [L.], Red port.

Wines consist chiefly of water, alcohol, a peculiar acid, the aerial acid, tartar, and an astringent gummy resinous matter, in which the colour of red wines resides, and which is squeezed out from the husks of the grapes. They differ from one another in the proportion of these ingredients, and particularly in that of the alcohol which they contain.

The uses of these liquors as menstrua and vehicles of the virtues of other medicines, will be given hereafter; in this place we shall consider only their effects on the human body. These are, to stimulate the stomach, cheer the spirits, warm the habit, promote perspiration, render the vessels full and turgid, raise the pulse, and quicken the circulation.

Sweet wines are stronger than they appear from the taste, because two impressions strike more feebly when combined than when separate. Red port, and most of the red

red wines, have an astringent quality, by which they strengthen the tone of the stomach and intestines, and thus prove serviceable for restraining immoderate secretions. Those which are of an acid nature, as Rhenish, pass freely by the kidneys, and gently loosen the belly. It is supposed that these last exasperate or occasion gouty and calculous disorders; and that new wines of every kind have this effect.

‘Wine is much used in fevers of the typhous kind, and often with great success, particularly when the appetite seems to call for it. Claret, Madeira, and Port, are those commonly employed in Britain, and even Port to the extent of two quarts a-day.’

VIOLÆ folia, flores: Viola martia purpurea flore simplici odore C. B. Viola odorata Lin. The single March violet; its flowers [L. E.]

This is often found wild in hedges and shady places, and flowers in March; the shops are generally supplied from gardens. In our markets we meet with the flowers of a different species, named by botanists *viola Martia major hirsuta, inodora*: these may be distinguished from the foregoing by their being larger, of a pale colour, and of no smell. The officinal flowers have a very pleasant smell, and a deep purplish blue colour, denominated from them *violet*. They impart their colour and flavour to aqueous liquors: a syrup made from this infusion has long maintained a place in the shops, and proves an agreeable and useful laxative for children,

VIPERA: Coluber berus Lin. [L. E.] The viper, or adder, is

one of the viviparous reptiles, without feet, about an inch in thickness, and twenty or thirty in length. The poison of this serpent is confined to its mouth: at the basis of the fangs, or long teeth which it wounds with, is lodged a little bag containing the poisonous liquid; a very minute portion of which, mixed immediately with the blood, proves fatal. Our viper-catchers are said to prevent the mischiefs otherwise following from the bite, by rubbing oil olive warm on the part. The flesh of the viper is perfectly innocent; and strongly recommended as a medicine of extraordinary service in scrophulous, leprous, rheumatic, and other obstinate chronical disorders. Its virtues, however, in these cases, are probably too much exaggerated. The viper is doubtless an high nutritious food; and hence in some kinds of weaknesses, and emaciated habits, is not undeservedly looked upon as a good restorative. To answer any valuable purposes, fresh vigorous vipers (not such as have been long kept alive after they are caught) should be liberally used as food. The wines and tinctures of them can scarce be supposed to receive any considerable virtue from the animal; the dry flesh brought us from abroad is entirely insignificant.

In the shops, a broth is directed to be prepared from fresh vipers, and a vinous tincture from dried ones [L.]: the dried flesh is also an ingredient in theriaca, and the fat in the ointment of tutty [L.]; this fat being supposed peculiarly useful in disorders of the eyes, for which that ointment is designed.

VIRGÆ AURÆ folia: Virga aurea angustifolia minus serrata C. B. Golden-rod; the leaves.
This

This is found wild on heaths and in woods, producing spikes of yellow flowers in August. The leaves have a moderately astringent bitter taste; and hence prove serviceable in debility and laxity of the viscera, and disorders proceeding from that cause.

VISCI QUERNI *lignum, solidum*: *Visci buccinatis C. B. Visci albi Lin.* Mistletoe; the wood and leaves.

This is a bushy plant, growing on the trunk and branches of different trees: that met with on the oak is generally preferred, perhaps on account of its being the most rare. It may, however, be propagated by art on any trees, by rubbing the berries against the bark. This office has hitherto been performed by the thrush (who feeds on the berries in the winter) in clearing his bill from the seeds that stick about it. This plant was held in veneration by the superstition of former ages: it was hung about the neck to prevent witchcraft, and taken internally to expel poisons. It has been celebrated as a specific in epilepsies, palsies, &c.; virtues, which it were greatly to be wished that experience gave any countenance to.

VITEX, vide **AGNUS CASTUS**.

VITIS VINIFERA. The vine-tree. The leaves of this tree were formerly celebrated as astringents, but have for a long time been entirely disregarded: their taste is herbaceous, with only a slight roughness. The trunk of the tree, wounded in the spring, yields a clear, limpid, watery juice: This tear of the vine has been accounted excellent for sore eyes; and by some recommended likewise in ardent and malignant fevers, and as a diuretic. The flowers have a plea-

sant smell, which water elevates from them in distillation; along with the water, a small portion of an elegant essential oil is said to arise, possessing in great perfection the fragrance of the flowers.—The unripe fruit is of a very harsh, rough, sour taste: its expressed juice, called verjuice, *omphacium agrella*, was of great esteem among the ancients, and still continues so in some places, as a cooling astringent medicine: a rob and syrup were formerly prepared from it.—The ripe fruit or grapes, of which there are several kinds, properly cured and dried, are the raisins and currants of the shops: the juice by fermentation affords wine, vinegar, and tartar; of all which in their places.

VITRIOLUM ALBUM, *five zinci [L. E.]* White vitriol, or vitriol of zinc; found in the mines of Goslar, sometimes in transparent pieces, but more commonly in form of white efflorescences, which are dissolved in water, and afterwards reduced by evaporation and crystallisation into large masses. We rarely meet with this sort of vitriol pure: 'it is ordered therefore by the Edinburgh College to be prepared.' After the zinc, which is its proper basis, has been revived by inflammable fluxes, there remains a substance which is attracted by the magnet, and discovers itself on other trials also to be iron. A solution of the vitriol deposits on standing an ochry sediment, which generally gives a blue tincture to volatile alkalis, and hence appears to contain copper. White vitriol is sometimes given from five or six grains to half a dram, as an emetic; it operates very quickly, and, if pure, without violence. Externally, it is employed as an ophthalmic, and often made the basis of collyria, both

both in extemporaneous prescription and in dispensaries. A solution of it is directed in this intention by the London College.

VITRIOLUM CÆRULEUM

five cupri [L. E.] Blue vitriol, or vitriol of copper, falsely called Roman vitriol. Greatest part of the blue vitriol at present met with in the shops, is said to be artificially prepared by uniting copper with the vitriolic acid. This salt has a highly acrid, austere, and very nauseous taste. It is a strong emetic, and is recommended as such by some, in incipient phthisis when supposed to be from tubercles. Its principal use is externally as an escharotic; and for stopping hemorrhages, which it effects by coagulating the blood, and contracting the mouths of the vessels. It gives name to an officinal water for this intention.

VITRIOLUM VIRIDE, *five ferri* [L. E.]

Green vitriol, or vitriol of iron, commonly called *copperas*; the Roman vitriol of the Italian and other foreign writers. This is prepared in large quantity at Deptford, by dissolving iron in the acid liquor which runs from certain sulphureous pyrites, exposed for a length of time to the air. When pure, it is similar in quality to the officinal *sal martis* or *chalybis*.

The green and blue vitriols (as well as the white) are in many places found native in the earth; though usually, in this state, neither sort is free from an admixture of the other: hence vitriols are met with of all the intermediate colours betwixt the grass green of the one and the sapphire blue of the other.

The acid of these salts has the greatest affinity with zinc, next to this with iron, and with copper the least of all. Hence solutions of

white vitriol deposit, on standing, greatest part of the iron and cupreous matter which they contain; and if some fresh zinc be added, the whole. In like manner, upon adding bright polished iron to solutions of green vitriol, if it holds any cupreous matter, this will be thrown down. By this means the white and green vitriols may be purified from other metallic bodies. Green vitriol has the general medical effects of iron.

ULMARIE, *seu Regina prati, folia, flores: Ulmaria barba cupri floribus compactis* C. B. *Spiraea ulmaria* Lin. Meadow-sweet, or Queen of the meadows; the leaves and flowers.

This herb is frequent in moist meadows, and about the sides of rivers; it flowers in the beginning of June, and continues in flower a considerable time. The flowers have a very pleasant flavour, which water extracts from them by infusion, and elevates in distillation. The leaves are herbaceous.

ULMI *cortex interior: Ulmi campestris foliis duplicato-ferratis, basi inequalibus* Lin. The inner bark of the elm-tree [E.]

It is an evergreen, trailing, shrubby plant with red berries, resembling the common red wort-bush, a native of Sweden, and growing in our gardens. The leaves have a bitterish astringent taste, and are recommended in powder, to the extent of at least two drams a-day, in ulcerations of the urinary passages and catarrhus vesicæ. The powder has been used with opium, the latter being gradually increased to a considerable quantity in diabetes, and it is said with advantage. Some use it for alleviating the dyspeptic symptoms in nephritic and calculous ailments.

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UR.

URTICA DIOICA *Lin.* Common stinging nettle [*E.*]

URTICÆ ROMANÆ *folia, semen: Urtica urentis pilulas seren-tis semine lini C. B. Urtica piluli-fera Lin.* Roman nettle; the leaves and seeds.

These have had sundry virtues at-tributed to them, which the present practice pays no regard to. The young leaves of the first sort are by some used in the spring as a whole-some pot-herb.

UVÆ PASSÆ [*L.*] *maiores:* Raisins of the sun; the dried grapes of the *vitis Damascena*.

UVÆ PASSÆ *minores:* Currants; the dried grapes of the *vitis Corinthiaca*.

The principal use of these is as an agreeable sweet; they impart a very pleasant flavour both to aqueous and spirituous menstrua. The seeds or stones are supposed to give a disagreeable relish, and hence are generally directed to be taken out: nevertheless I have not found that they give any taste at all. The raisins of the sun are an ingredient in the pectoral decoction, tincture of senna, and stomachic tincture [*L.*]

UVÆ URSI *folia. Vitis idæa C. B. Arbuti uvæ ursi caulibus procumbentibus, foliis integerrimis Lin.* Bear's whortleberry; the leaves [*E.*]

'A decoction of this, in the proportion of an ounce to a pound of water boiled to a half, has a mild astringent taste, has been recommended in certain obstinate cutaneous eruptions, and is said to aggravate the disorder at first, but to prove useful if continued in the dose of a pint morning and evening.'

WINTERANUS CORTEX, *Cortex Magellanicus:* Winter's bark;

the produce of a tree growing in Jamaica, Barbadoes, &c. called by Sir Hans Sloane *Periclymenum rec-tum, foliis laurinis, cortice acri aro-matico:* the *Winterana aromatica Soland.* It was first discovered on the coast of Magellan by Captain Winter, in the year 1567: the sailors then employed the bark as a spice, and afterwards found it serviceable in the scurvy; for which purpose it is, at present also, sometimes made use of in diet-drinks. The true Winter's bark is not often met with in the shops, canella alba being generally substituted to it, and by many reckoned to be the same: there is nevertheless a considerable difference betwixt them in appearance, and a greater in quality. The Winter's bark is in larger pieces, of a more cinnamon colour, than the canella; and tastes much warmer and more pungent.

ZEDOARIA [*L. E.*] Zedoary; the root of an Indian plant (*Kemipferia rotunda Lin.*), brought over in oblong pieces about the thickness of the finger, or in roundish ones about an inch in diameter. Both sorts have an agreeable fragrant smell, and a warm, bitterish, aromatic taste.

In distillation with water, it yields an essential oil, possessing the smell and flavour of the zedoary in an eminent degree; the remaining decoction is almost simply bitter. Spirit likewise brings over some small share of its flavour: nevertheless the spirituous extract is considerably more grateful than the zedoary itself. An extract made from it with proof spirit (which is inferior to that prepared with rectified spirit) is an ingredient in the confectio cardiaca [*L.*]; the root in substance enters the confectio Paulina, mithridate, and theriaca [*L.*]

ZIBETHUM: Civet; a softunctuous substance, of a white, brown, or blackish colour, brought from the Brazils, the coast of Guinea, and the East Indies. It is met with in certain bags, situated in the lower part of the belly of an animal, said to be one of the cat kind. The chief use of this drug is in perfumes; it is rarely, if ever, employed for any medicinal purposes.

ZINCUM [E.] Zinc; a semi-metal, which is inflammable *per se*, sublimable into flowers, which afterwards remain fixed in the strongest fire, soluble in every acid, not miscible in fusion with sulphur, changing copper into a yellow metal, brass. Several productions of this metal, though not generally known to be such, are kept in the shops; as its rich ore calamine, the white vitriol, the pure white flowers of zinc called *pompholyx*, and the more impure tutty. The preparations of zinc are employed principally in external applications, as ophthalmics. The flowers levigated into an impalpable powder, form with oily substances an useful unguent, and with rose-water, and the like, elegant collyria, for defluctions of thin sharp humours upon

the eyes. They are moderately astringent; and act, if the levigation has been duly performed, without acrimony or irritation.

Internally, they have been recommended in epilepsy and other spasmodic affections, both alone and with the *cuprum ammoniacum*; and some think they prove a useful addition to the bark in intermittents.

ZINGIBERIS radix: *Amomi zingiberis Lin.* Ginger: A root brought from China and the East and West Indies; of a fragrant smell, and a hot, biting, aromatic taste. Rectified spirit extracts its virtues by infusion, in much greater perfection than aqueous liquors; the latter elevate its whole flavour in distillation, the former little or nothing. Ginger is a very useful spice in cold flatulent colics, and in laxity and debility of the intestines: it does not heat so much as those of the pepper kind, but its effects are more durable. It gives name to an officinal syrup [*L. E.*], to the *Zingiber conditum*, *zingiberis radix condita*, candied ginger brought from abroad [*E.*], and enters a great number of the compositions.

General TITLES including several SIMPLES.

The five opening roots:

{ Smallage,
Asparagus,
Fennel,
Parsley,
Butchers broom.

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The

The five emollient herbs :

{ Marshmallows,
 { Mallows,
 { Mercury,
 { Pellitory of the wall,
 { Violets.

The four cordial flowers :

{ Borage,
 { Bugloss,
 { Roses,
 { Violets.

The four greater hot seeds :

{ Anise,
 { Caraway,
 { Cummin,
 { Fennel.

The four lesser hot seeds :

{ Bishopsweed,
 { Stone-parsley,
 { Smallage,
 { Wild carrot.

The four greater cold seeds :

{ Water melons,
 { Cucumbers,
 { Gourds,
 { Melons.

The four lesser cold seeds :

{ Succory,
 { Endive,
 { Lettuce,
 { Purslane,

The four capillary herbs :

{ Maidenhair,
 { English Maidenhair,
 { Wall rue,
 { Ceterach.

The four carminative flowers :

{ Camomile,
 { Feverfew,
 { Dill,
 { Melilot.

The simples of each of the above classes have been often employed together, under the respective general appellations. This practice has entirely ceased among us ; and accordingly these denominations are now expunged both from the London and Edinburgh Pharmacopœias, though still retained in foreign ones.

GENERAL RULES for the Collection and Preservation of SIMPLES.

Roots.

ANNUAL roots are to be taken up before they shoot out stalks or flowers: Biennial ones, chiefly in the autumn of the same year in which the seeds were sown: The perennial, when the leaves fall off, and therefore generally in the autumn. Being washed clean from dirt, and freed from the rotten and decayed fibres, they are to be hung up in a [warm], shady, airy place, till sufficiently dried. The thicker roots require to be slit longitudinally, or cut transversely into thin slices. Such roots as lose their virtues by exsiccation [or are desired to be preserved in a fresh state, for the greater conveniency of their use in certain forms] are to be kept buried in dry sand [*E.*]

THERE are two seasons in which the biennial and perennial roots are reckoned the most vigorous, the autumn and spring; or rather the time when the stalks or leaves have fallen off, and that in which the vegetation is just going to begin again, or soon after it has begun; which times are found to differ considerably in different plants.

The College of Edinburgh, in the two first editions of their pharmacopœia, directed them to be dug in the spring, after the leaves were formed; in the third edition, the autumn is preferred, and this rule is continued in the succeeding ones. The generality of roots appear, indeed, to be most efficacious in the spring: but as at this time they are

also the most juicy, and consequently shrivel much in drying, and are rather more difficultly preserved, it is commonly thought most advisable to take them up in autumn. No rule, however, can be given, that shall obtain universally: arum root is taken even in the middle of summer, without suspicion of its being less active than at other seasons; while angelica root is inert during the summer, in comparison of what it was in the autumn, spring, or winter.

HERBS and LEAVES.

HERBS are to be gathered when the leaves have come to their full growth, before the flowers unfold; but of some plants the flowery tops are preferred. They are to be dried in the same manner as roots [*E.*]

For the gathering of leaves, there cannot perhaps be any universal rule, any more than for roots; for though most herbs appear to be in their greatest vigour about the time of their flowering, or a little before, there are some in which the medicinal parts are more abundant at an earlier period.

Thus mallow and marshmallow leaves are most mucilaginous when young, and by the time of flowering approach more to a woody nature. A difference of the same kind is more remarkable in the leaves of certain trees and shrubs: the young buds, or rudiments of the leaves, of the black poplar tree, have a strong fragrant smell, approaching to that of storax, but by the time that the leaves have come

to their full growth, their fragrance is exhausted.

Herbs are directed by most of the pharmaceutic writers to be dried in the shade; a rule which appears to be very just, though it has sometimes been misunderstood. They are not to be excluded from the sun's *beat*, but from the strong action of the solar *light*; by which last their colours are very liable to be altered or destroyed, much more so than those of roots. Slow drying of them in a cool place is far from being of any advantage: both their colours and virtues are preserved in greatest perfection when they are dried hastily by a heat of common fire as great as that which the sun can impart: the juicy ones, in particular, require to be dried by heat, being otherwise subject to turn black. Odoriferous herbs, dried by fire till they become friable, discover indeed, in this arid state, very little smell; not that the odorous matter is dissipated; but on account of its not being communicated from the perfectly dry subject to dry air; for as soon as a watery vehicle is supplied, whether by infusing the plant in water, or by exposing it for a little time to a moist air, the odorous parts begin to be extracted by virtue of the aqueous moisture, and discover themselves in their full force.

Of the use of heat in the drying of plants, we have an instance in the curation of tea among the Chinese. According to the accounts of travellers, the leaves, as soon as gathered, are brought into an apartment furnished with a number of little furnaces, or stoves, each of which is covered with a clean smooth iron plate; the leaves are spread upon the plates, and kept rolling with the hands till they begin to curl up about the edges; they are then immediately swept

off on tables, on which one person continues to roll them, while another fans them that they may cool hastily: this process is repeated two or three times, or oftener, according as the leaves are disposed to unbend on standing.

EXSICCATION OF HERBS and FLOWERS [E.]

HERBS and flowers are to be dried by a gentle heat of a stove or common fire, and only in that quantity at a time by which the exsiccation may be very soon finished. By this means their strength is best preserved; and this is indicated in proportion as they retain their native colour.

But the leaves of hemlock, and some other herbs replete with a subtil volatile matter, are to be beat immediately after the exsiccation, and preserved in glass-vessels, well shut.

FLOWERS.

FLOWERS are to be gathered when moderately expanded, on a clear dry day, before noon. Red roses are taken before they open, and the white heels clipped off and thrown away [E.]

THE quick drying, above recommended for the leaves of plants, is more particularly proper for flowers; in most of which both the colour and smell are more perishable than in leaves, and more subject to be impaired by slow exsiccation. Of the flowers which come fresh into the apothecaries hands, the only ones employed dry in the London Pharmacopœia are red roses; and these, in all the compositions in which they are used in a dry state, are expressly ordered to be dried hastily (*celeriter arefacta*). One of the most valuable aromatics of European

ropean growth, saffron, is a part of a flower, dried on paper on a kind of kiln, with a heat sufficient to make it sweat, with care only not to endanger the scorching of it.

It may here be observed, that the virtues of flowers are confined to different parts of the flower in different plants. Saffron is a singular production growing at the end of the stile or pistil. The active part of camomile flowers is the yellow disk, or button in the middle; that of lilies, roses, clove-julyflowers, violets, and many others, the petala or flower-leaves; while rosemary has little virtue in any of these parts, the fragrance admired in the flowers of this plant residing chiefly in the cups.

SEEDS and FRUITS.

SEEDS should be collected when ripe and beginning to grow dry, before they fall off spontaneously. Fruits are also to be gathered when ripe, unless they are ordered to be otherwise [E.]

Of the fruits whose collection comes under the notice of the apothecary, there are few which are used in an unripe state: the principal is the sloe, whose virtue as a mild astringent is greatly diminished by maturation. The fruit of the orange tree, raised in our gardens or green-houses, is sometimes gathered in a state of much greater immaturity, soon after it is formed on the tree, before it has acquired its acid juice; at this time it proves an elegant aromatic bitter, greatly resembling what are called *Curaçao oranges*, which appear to be no other than the same fruit gathered at the same period, in a warmer climate.

The rule for collecting seeds is more general than any of the others,

all the officinal seeds being in their greatest perfection at the time of their maturity. As seeds contain little watery moisture, they require no other warmth for drying them than that of the temperate air in autumn; such as abound with a gross expressible oil, as those commonly called the *cold seeds*, should never be exposed to any considerable heat; for this would hasten the rancidity, which, however carefully kept, they are very liable to contract. Seeds are best preserved in their natural husks, or coverings, which should be separated only at the time of using; the husk, or cortical part, serving to defend the seed from being injured by the air.

WOODS and BARKS.

THE most proper season for the felling of woods, or shaving off their barks, is generally the winter [E.]

THE only woods of our own growth, retained in the catalogues of Simples of our pharmacopœias ('viz. last edition'), are the juniper and box; the first of which is rarely or never kept in the shops, or employed in practice; the other is procured from the turner; and it is indifferent at what season it has been cut down, being at all times sufficiently fit for the only use it is applied to, the yielding an empyreumatic oil by distillation in a strong fire.

Of the barks of our own growth, the London College has not retained one. In the Edinburgh Pharmacopœia ('viz. in the last edition') there are several, viz. those of the ash-tree, birch-tree, oak, elm, sloe, wild service, black alder, and elder, which, however, have been so rarely used in medicine, that the seasons of their greatest perfection can-

not be ascertained from experience. It may be doubted, whether barks are not generally more replete with medicinal matter in the summer and spring than in winter. The barks of many trees are in summer so much loaded with resin and gum, as to burst spontaneously, and discharge the redundant quantity. It is said that the bark of the oak answers best for the tanners at the time of the rising of the sap in spring; and as its use in tanning depends on the same astringent quality for which it is used in medicine, it should seem to be fittest for medicinal purposes also in the spring. It may be observed likewise, that it is in this last season that barks in general are most conveniently peeled off.

ANIMALS and MINERALS.

ANIMALS and minerals are to be chosen in their most perfect state, unless they are ordered otherwise [E.]

THE animals of the London Pharmacopœia are only millepedes and the viper, to which the Edinburgh add snails, earth-worms, and bees: Whatever virtues these bodies may have, they are supposed to be best when they have attained to their common full growth. As there are no distinctions of maturity or immaturity in the mineral kingdom, the only rule for directing our choice here must be the purity of the subjects from any mixture of other bodies: none of them are ever to be used in an impure state.

PART III.

Pharmaceutical Preparations.

CHAP. I.

THE MORE SIMPLE PREPARATIONS.

TERREORUM, aliorumque
quæ aqua non dissolvuntur
corporum præparatio. *The
preparation of EARTHY and
such other pulverable bodies
as will not dissolve in water.*

THESE substances are first to
be pulverised in a mortar, and
then levigated with a little water,
upon a hard and smooth marble,
into an impalpable powder: this is
to be dried upon a chalk stone, and
afterwards set by for a few days,
in a warm, or, at least, very dry
place. *L.*

After this manner are to be prepa-
red,

Ærugo, verdigris. L.

Antimonium, antimony. L. E. +

*Chelæ cancorum, crabs-claws. L.
E. +*

Corallium, coral. L. E. +

Creta, chalk. L. E. + 'The Edinburgh
College direct it to be washed with
water till the water has neither

*taste nor colour: By this method
the chalk is freed of all saline mat-
ter.*

*Lapis bezoar, bezoar stone; which
is to be moistened, in the levigation,
with spirit of wine instead of wa-
ter. L.*

*Lapis calaminaris, calamine stone,
previously calcined for the use of
those who make brags. L. E. +*

*Lapis hæmatites, blood-stone. L.
E. +*

Margaritæ, pearls. L. E. +

*Oculi cancrorum, crabs-eyes, so call-
ed. L. E.*

*Ostreorum testæ, oyster-shells, wash-
ed clean from dirt. L. E. The hol-
low shells are preferred [E.] on
account of their containing more
of the fine white earth, in pro-
portion to the outward rough
coat, than the thinner fat ones:
the rough matter appears to be
largely impregnated with marine
salt.*

*Ovorum testæ, egg-shells freed, by
boiling, from the skin that adheres
to them. L.*

Succinum, amber. L. E. +

Tutia,

Tutia, tutty. L. E.

In preparing antimony, calamine and tutty, particular care ought to be taken to reduce them into the most subtile powder possible. *L.*

WHERE large quantities of the foregoing powders are to be prepared, it is customary, instead of the stone and muller, to employ hand-mills made for this use, consisting of two stones; the uppermost of which turns horizontally upon the lower, and has an aperture in the middle for the convenience of supplying fresh matter, or of returning that which has already passed, till it is reduced to a proper degree of fineness.

For the levigation of hard bodies, particular care should be taken, whatever kind of instruments is made use, that they be of sufficient hardness, otherwise they will be abraded by the powders. The hematites, a hard iron ore, is most conveniently levigated betwixt two iron planes; for if the common levigating stones are made use of, the preparation, when finished, will contain almost as much of foreign matter from the instrument as of the hematites.

It has been customary to moisten several powders in levigation, with rose, balm, and other distilled waters: these, nevertheless, have no advantage above common water, since in the subsequent exsiccation they must necessarily exhale, leaving the medicine possessed of no other virtue than what might be equally expected from it when prepared with the cheaper element.

Some few substances, indeed, are more advantageously levigated with spirit of wine than with water. Thus bezoar has the green colour usually expected in this costly preparation, considerably improved thereby. A little spirit may be

added to the other animal-substances, if the weather is very hot, and large quantities of them are prepared at once, to prevent their running into putrefaction; an accident which, in those circumstances, sometimes happens when they are levigated with water only. Crabs-eyes, which abound with animal gelatinous matter, are particularly liable to this inconvenience.

The caution given above for reducing antimony, calamine, and tutty, to the greatest subtilty possible, demands particular attention. The tenderness of the parts to which the two last are usually applied, requires them to be perfectly free from any admixture of gross irritating particles. The first, when not thoroughly comminuted, might not only, by its sharp needle-like spicula, wound the stomach, but likewise answers little valuable purpose as a medicine, proving either an useless load upon the viscera, or at best passing off without any other sensible effect than an increase of the grosser evacuations; whilst, if reduced to a great degree of fineness, it turns out a medicine of considerable efficacy.

The most successful method of obtaining these powders of the requisite tenuity, is, to wash off the finer parts by means of water (see page 77.), and continue levigating the remainder till the whole becomes fine enough to remain, for some time, suspended in the fluid; a process received in the Edinburgh Pharmacopœia, and there directed as follows.

Edinb.

A quantity of water is to poured upon the levigated powder, in a large vessel, and the vessel repeatedly shaken, that the finer parts of the powder may be diffused through the water: the liquor

quor is then to be poured off, and set by till the powder settles. The gross part, which the water would not take up, is to be further levigated, and treated in the same manner.

By this method, which is that commonly practised in the preparation of colours for the painter, powders may be obtained of any required degree of tenuity; and without the least mixture of the gross parts, which are always found to remain in them after long continued levigation: all the coarser matter settles at first, and the finer powder continues suspended in the water, longer and longer, in proportion to the degree of its fineness. The same process may likewise be advantageously applied to other hard pulverable bodies of the mineral kingdom, or artificial preparations of them; provided they are not soluble in, or specifically lighter than water. The animal and absorbent powders, crabs-claws, crabs-eyes, oyster-shells, egg-shells, chalk, pearl, coral, and bezoar, are not well adapted to this treatment; nor indeed do they require it. These substances are readily soluble in acid juices without much comminution: if no acid is contained in the first passages, they are apt to concreate, with the mucous matter usually lodged there, into hard indissoluble masses; the greater degree of fineness they are reduced to, the more are they disposed to form such concretions, and enabled to obstruct the orifices of the small vessels.

AXUNGIE PORCINÆ, SEVI- que OVILLI purificatio.

*The purification or trying of hogs-lard
and mutton-suet.*

Lond.

Chop them into small pieces, and melt them by a gentle heat, with

the addition of a little water; then strain them from the membranes.

THE use of the water is to prevent the fat from burning and turning black; which it does very effectually, though it sometimes prolongs the process, and is likewise apt to be in part imbibed by the fat. The Edinburgh Dispensatory directed the fat to be first freed from the skins, blood-vessels, and fibres; then washed in fresh quantities of water till it no longer gives the liquor any bloody tinge; afterwards melted, strained, and kept close from the injuries of the air. The shops are usually supplied with these fats ready prepared.

AXUNGIE VIPERINÆ

curatio.

The purification of viper's fat.

Lond.

Let the fat, separated from the intestines, be melted by a gentle fire, and then pressed through a thin linen cloth.

THE quantity of this fat usually purified at a time, is so small, that the heat may be easily regulated so as to prevent burning without the addition of any water.

It is not necessary, as Dr Pemberton observes, to be very curious in picking out the fat; it is sufficient if the heart, liver, and other bloody parts, are taken away; for the rest of the membranes crisp up while the fat melts, so as to be easily separated by straining.

MELLIS DESPUMATIO.

The despumation or clarifying of honey.

Lond.

Let the honey be liquefied in a water-bath (that is, by setting the vessel containing the honey in a vessel

vessel of hot water) and the scum which arises taken off.

The intention of this process is to purify the honey from wax, or other gross matters that have been united with it by the violence of the press in its separation from the comb; and from meal and such like substances, which are sometimes fraudulently mingled with it. When the honey is rendered liquid and thin by the heat, these lighter matters rise freely to the surface.

SCILLÆ COCTIO.

The baking of squills.

Lond.

Let the squill (freed from the outer skin, and the hard part to which the little fibres adhere) be inclosed in a paste made of wheat-flour and water, and baked in an oven till the paste becomes dry, and the squill soft and tender throughout.

This preparation is as old as the theriaca; and is continued in our dispensatory, for no other use than making the troches of squills, which are one of its principal ingredients. The Edinburgh dispensatory having now dropt the theriaca, has dropt also the baked squills and the troches, and admitted them formerly only in compliance with custom, giving expressly the preference to squills moderately dried. The intention of baking the root is to abate its acrimony; and the effect is often to destroy its power entirely.

SCILLÆ EXSICCATIO.

The drying of squills.

Lond.

Let the squill, cleared from its outer skin, be cut transversely into thin slices, and dried with a very

gentle heat. 'When properly managed, the squill is friable, and retains its bitterness and acrimony. E.'

By this method the squill dries much sooner than when only its several coats are separated, as has been usually directed; the internal part being here laid bare, which, in each of the entire coats, is covered with a thin skin, which impedes the exhalation of the moisture. The root loses in this process four-fifths of its original weight; the parts which exhale, appear to be merely watery: hence six grains of the dry root are equivalent to half a dram of it when fresh; a circumstance to be particularly regarded in the exhibition of this medicine. In the preceding editions of our Dispensatory, a particular caution was given, not to use an iron knife for cutting squills, but one of wood, ivory, or other bone: the foundation of this caution is said to be, not so much that the squill would receive any ill qualities from the iron; as, that its acrid juice, adhering to the knife, might render a wound received by it extremely painful, or even dangerous.

RHABARBARI et NUCIS MOSCHATÆ torrefactio.

The roasting of rhubarb and nutmeg.

Lond.

Roast them with a gentle heat, until they become easily friable.

NUTMEGS, in their natural state, are so soft and unctuous, as scarce to be reducible into powder, a form in which they are occasionally wanted; and rhubarb is very difficultly so, unless it be thoroughly dry. The torrefaction renders them easily pulverable; and as soon as this point is obtained, should be immediately discontinued, otherwise the drugs

drugs will be considerably injured. This treatment is supposed by some to increase the astringency of the subjects, perhaps on no very good foundation: it undoubtedly renders the rhubarb less purgative, and the nutmegs less aromatic. Both drugs may be reduced into sufficiently fine parts for most purposes, by means of a grater, without any alteration being made in their native quality.

SPONGIÆ USTIO.

The burning of sponge.

Lond.

Burn the sponge in a close earthen vessel, until it becomes black, and easily friable: then powder it in a glass or marble mortar.

Edinh.

‘Let the sponge be cut into small pieces, and freed of earthy matters adhering to it. During the burning it ought to be frequently stirred.’

THIS medicine, now first received in the dispensatory, has been in use for a considerable time; and employed against scrophulous disorders and cutaneous foulnesses, in doses of a scruple and upwards. Its virtues seem to depend upon a volatile salt, just formed, and combined with its own oil. If the sponge be distilled with a stronger heat, it yields a large proportion of that salt in its proper form. The salt is in this preparation so far extricated, that if the burnt sponge be ground in a brass mortar, it corrodes the metal, so as to contract a disagreeable taste, and sometimes an emetic quality.

Bees, earthworms, and other animal substances, have by some been prepared in the same manner, and recommended in different diseases; but as these substances fall greatly

short of sponge in the quantity of volatile salt producible from them by fire, they are probably inferior also in medicinal efficacy. Of all the animal matters that have been tried, raw silk is the only one which exceeds, or equals sponge, in the produce of salt.

A good deal of address is requisite for managing this process in perfection. The sponge should be cut small, and beaten for some time in a mortar, that all the stony matters may be got out, which compared with the weight of the sponge when prepared, will sometimes amount to a considerable quantity. The burning should be discontinued as soon as ever the matter is become thoroughly black. If the quantity put into the vessel at once is large, the outside will be sufficiently burnt before the inside is affected; and the volatile salt of the former will in part escape, before that in the latter is begun to be formed. The best method of avoiding this inconvenience, seems to be, to keep the sponge continually stirring, in such a machine as is used for the roasting of coffee.

CORNU CERVI CALCINATIONIO.

The calcination of hartshorn.

Lond.

Burn pieces of hartshorn in a potter's furnace, till they become perfectly white; then powder and levigate them after the same manner as the other earthy bodies.

THE intention here is, totally to burn out and expel the oil, salt, and other volatile parts; so as to leave only a white insipid animal earth. For this purpose, a strong fire, and the free admission of air, are necessary. The potter's furnace is directed merely for the sake of con-

convenience; where this is not to be had, any common furnace or stove may be made to serve: on the bottom of the grate spread some lighted charcoal, and above this lay the horns. The whole will burn vehemently: the vegetable matter is reduced to ashes; and the horns are burnt to whiteness, still retaining their original form, by which they are easily distinguished from the other. They ought to be separated as soon as grown cold, to prevent their imbibing any fixed salt from the vegetable ashes moistened by the air. The horns left after the distillation of the volatile salt and oil of hartshorn, are as proper for this use as any other; that process only collecting such parts as are here dissipated in the air.

Calcined hartshorn is the purest of the animal absorbent powders; as being perfectly free from any glutinous or oily matter, which most of the others abound with. It appears nevertheless to be one of the weakest in absorbent power, or the most difficult of solution in acids.

'This calx, like that of all animal matters, is not to be considered as a pure earth, being really a combination of calcareous earth and phosphoric acid. It is not therefore probable, that it can possess any considerable power of correcting acidity; and where it produces any effect in this way, it can only happen when the earth is predominant, or when a quantity of alkaline salt still adheres to the calx.'

PULPARUM EXTRACTIO.

The extraction of pulps.

Lond. and Edinb.

Unripe pulpy fruits, and ripe ones if they are dry, are to be boiled in a small quantity of water until they become soft: then press out the pulp through a strong hair-sieve, and afterwards boil it

down to due consistence ('to that of honey. E.'), in an earthen vessel, over a gentle fire; taking care to keep the matter continually stirring, to prevent its burning.

The pulp of *castia fistularis* is in like manner to be boiled out from the bruised pod, and reduced afterwards to a proper consistence, by evaporating the water.

The pulps of fruits that are both ripe and fresh, are to be pressed out through the sieve, without any previous boiling.

STYRACIS COLATIO.

The straining of storax.

Lond.

Soften storax calamita in hot water, then press it out betwixt warm iron plates; and separate the storax, now purified, from the water.

THE storax commonly met with stands greatly in need of purification. It contains a large quantity of woody matter, which this process effectually frees it from, though in other respects liable to some inconveniences. The woody substance in some measure defends the storax from the action of the press, and retains part of it behind: at the same time that the storax is apt to suffer a considerable dissipation of its volatile parts, in which its fragrance and principal virtue consist. To prevent as much as possible this last inconvenience, the operator ought carefully to avoid using a greater heat than is absolutely necessary; and as soon as the storax is sufficiently softened, to be expeditious in the straining of it. It has been queried whether this resin does not communicate somewhat to the water it is boiled in; as benzoin, with which it agrees in its other pharmaceutical characters, imparts to

to water a saline matter similar to the sublimed flowers. On trial, it could not be observed that any saline matter was thus separated from storax, though it impregnated the water considerably with its fragrance.

Storax may be excellently purified by means of spirit of wine, which this resin totally dissolves in so as to pass through a filtre, the impurities alone being left. If the storax is afterwards wanted in a solid form, it may be recovered from this solution by gently distilling off the spirit, which will elevate very little of its flavour, or by pouring to it a quantity of water. See Chap. VI.

OPIUM COLATUM, vel EXTRACTUM THEBAICUM.

Strained opium, or the thebaic extract.
Lond.

Take of opium, cut into slices, one pound; dissolve it into the consistence of a pulp, in a pint of boiling water, with care to prevent its burning; and whilst it remains quite hot, strongly press it from the feces through a linen cloth: the strained opium is then to be reduced, by a water-bath or other gentle heat, to its original consistence.

Opium thus softened by a small quantity of water passes the strainer entire, the feces only being left behind. If it was dissolved in a large quantity of water, its resinous and gummy parts would be separated from one another.

WHERE large quantities of opium are purified at once, the inspissation is most commodiously performed in a water-bath: but small quantities may be very safely inspissated, by placing the vessel imme-

diately over a gentle fire; the matter being kept stirring, and the vessel occasionally removed from the fire whenever there is any suspicion of its becoming too hot. The grosser impurities of the opium are by this process effectually separated; but some of its heterogeneous admixtures, consisting chiefly of dust and farinaceous matters, are so fine, as partly to pass along with it through the pores of the strainer when diluted by the press: this manifestly appears upon boiling the strained opium in water, and afterwards in spirit; when a considerable quantity of earthy matter will be left, which is not soluble in either of those menstrua.

THE OTHER GUMS, as ammoniacum, galbanum, asafoetida, and the like, are purified after the same manner; only here a larger quantity of water may be made use of without injury. If the resinous part happens to subside, take it out, and reserve it to be added again towards the end of the inspissation, that it may unite with the rest into one uniform mass.

Any gum that melts easily, as galbanum, may likewise be purified by including it in a bladder, and keeping it in boiling water, until the gum becomes soft enough to be pressed from its impurities through a canvas strainer [L.]

IN the straining of all the gums, care should be taken, that the heat be neither too great, nor too long continued; otherwise a considerable portion of their more active volatile matter will be lost: an inconvenience which cannot, by any care, be wholly avoided. Hence, as the faculty of Paris observes, the purer tears, unstrained, are preferable, for internal use, to the strained gums.
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The last of the above methods, that of softening the gum in a bladder by external heat, without the addition of water, appears to be the most eligible for all those that will admit of being thus liquefied sufficiently; both as exhalation is prevented during the liquefaction; and as the strained gum returns in cooling to its original consistence, without the further heat which is requisite in the other method for evaporating the water. Opium is perhaps less injured by heat than the rest of the gums, the virtues of this drug seeming to reside more in its fixed than in the volatile parts: it is nevertheless expedient, that the smell of the opium, which affords an useful mark of its genuineness, be as much as possible preserved; this, if the quantity of water was large, would be destroyed by the long evaporation which would then become necessary.

It is by no means certain that the virtues of opium reside in its fixed parts; and from some trials it appears, that its more immediately narcotic powers really reside in a volatile principle.

In the Edinburgh Dispensatory, opium, and the fouler kinds of

aloës, were directed to be purified, by dissolving them in a sufficient quantity of water with a gentle heat, straining the solutions, and evaporating them to the consistence of honey. The other gums are not required to be purified.

It were to be wished that the consistence, to which the strained solutions are to be reduced, was determined with more precision, particularly in regard to opium, that there might be as little uncertainty as possible in its dose.

MILLEPEDARUM PRÆPARATIO.

Preparation of millepedes.

Lond. and Edinb.

The millepedes are to be inclosed in a thin canvas cloth, and suspended over hot spirit of wine, in a close vessel, till they are killed by the steam, and rendered friable.

THESE are convenient ways of rendering millepedes pulverable, without endangering any loss of such virtues as they may be possessed of.

C H A P.

C H A P. II.

SUBSTANCES *extracted from* VEGETABLES *by Expression.*

S E C T. I.

JUICES.

JUICES are obtained from the succulent parts of plants, by including them, after being properly cut, bruised, &c. in a hair-bag, and pressing them, betwixt wooden cheeks, in the common screw-press, so long as any liquor drops from them.

THE harder fruits require to be previously well beaten or ground; but herbs are to be only moderately bruised, for if these are over bruised, a large quantity of the herbaceous matter will be forced out along with the juice. Hempen or woollen bags are apt to communicate a disagreeable flavour; the threads of these likewise swell in proportion as they imbibe moisture, so as in great measure to prevent the free percolation of the juice.

The fluids thus extracted from succulent fruits, both of the acid and sweet kind, from most of the acid herbs, as scurvy-grass and water-cresses, from the acid herbs, as sorrel and wood-sorrel, from the aperient lactescent plants, as dandelion and hawkweed, and from sun-

dry other vegetables, contain great part of the peculiar taste and virtues of the respective subjects. The juices, on the other hand, extracted from most of the aromatic herbs, as those of mint and the fragrant Turkey balm, commonly called *balm of Gilead*, have scarcely any thing of the flavour of the plants, and seem to differ little from decoctions of them made in water boiled till the volatile odorous parts have been dissipated. Many of the odoriferous flowers, as the lily, violet, hyacinth, not only impart nothing of their fragrance to their juice, but have it totally destroyed by the previous bruising. From want of sufficient attention to these particulars, practitioners have been frequently deceived in the effects of preparations of this class: juice of mint has been often prescribed as a stomachic, though it wants those qualities by which mint itself and its other preparations operate in that intention.

The juices, thus forcibly pressed out from plants, differ from those which flow spontaneously, or from

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incisions; these last consisting chiefly of such fluids as are not diffused through the whole substance of the vegetable subject, but elaborated in distinct vessels, or secreted into particular receptacles. From poppy heads, slightly wounded, there issues a thick milky liquor, which dries by a moderate warmth into opium; whilst the juice obtained from them by pressure is of a dark-green colour, and far weaker virtue.

Juices newly expressed are generally thick, viscid, and very impure: By colature, a quantity of gross matter is separated, the juice becomes thinner, limpid, and better fitted for medicinal purposes, tho' as yet not entirely pure: on standing, it becomes again turbid, and apt to run into a fermentative or putrefactive state. Clarification with whites of eggs renders the juices more perfectly fine; but there are few that will bear this treatment without a manifest injury to their flavour, taste, and virtue.

The most effectual method of purifying and preserving these liquors, is, to let the strained juices stand in a cool place, till they have deposited their grosser feces, and then gently pass them several times through a fine strainer till perfectly clear; when about one-fortieth part their weight of good spirit of wine may be added, and the whole suffered to stand as before: a fresh sediment will now be deposited, from which the liquor is to be poured off, strained again, and put into small bottles that have been washed with spirit and dried. A little oil is to be poured on the surface, so as very nearly to fill the bottles, and the mouths closed with leather, paper, or stoped with straw, as the stalks in which Florence wine is brought to us: this serves to keep out dust, and suffers the air, which in process of

time arises from all vegetable liquors, to escape; which air would otherwise endanger the bursting of the glasses; or, being imbibed afresh, render their contents vapid and foul. The bottles are to be kept on the bottom of a good cellar or vault, placed up to the necks in sand. By this method juices may be preserved for a year or two; and some for a much longer time.

It has already been observed, that there are great differences in juices, in regard to their being accompanied in the expression with the virtues of the subjects. There are equal differences in regard to their preserving those virtues, and this independently of the volatility of the active matter, or its disposition to exhale. Even the volatile virtue of scurvy-grass may by the above method be preserved almost entire in its juice for a considerable time; while the active parts of the juice of the wild cucumber quickly separate and settle to the bottom, leaving the fluid inert. Juices of a rum root, iris root, bryony root, and sundry other vegetables, throw off in like manner their medicinal parts to the bottom.

SUCCI SCORBUTICI.

The scorbutic juices.

Lond.

Take the juice of

Garden scurvy-grass, two pints;
Brooklime,
Water-cresses, each one pint;
Seville oranges, a pint and quarter.

Mix them together; let them stand till the feces have subsided; and then either pour the liquor off clear, or pass it through a strainer.

Edinb.

Take of

Juice of garden scurvy-grass,

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Water-creffes, both expressed from the fresh herbs;

Seville oranges, of each two pounds;

Spirituos nutmeg-water, half a pound.

Mix them, and let them stand till the feces have subsided, then pour out the clear liquor.

‘By this formula the Edinburgh College have rejected the brooklime and the sugar. The sugar was certainly a very improper addition; for though it may preserve dry vegetable matters (see CONSERVES), yet when added to juices largely impregnated with watery and mucilaginous matter, it would no doubt furnish that very principle most favourable to the production of the vinous fermentation. To the compound horse-radish water they have substituted the spirituous water of nutmegs: Besides that, this water has the same property of preserving the juices from fermentation; it is also much more agreeable to the pa-

late, and will make the juices sit easier on the stomach.’

BOTH these compositions are of considerable use for the purposes expressed in the title; the orange juice is an excellent assistant to the scurvy-grafs and other acrid antiscorbutics; which, when thus mixed, have been found from experience to produce much better effects than when employed by themselves. These juices may be taken from an ounce or two to a quarter of a pint, two or three times a day: they generally increase the urinary secretion, and sometimes introduce a laxative habit. Preserved with the cautions above mentioned, they will keep good for a considerable time; though, whatever care be taken, they are found to answer better when fresh; ‘and from the difficulty of preserving them so, they have of late been very much laid aside, especially since we have been provided with more convenient and useful remedies.’

S E C T. II.

EXPRESSED OILS.

EXPRESSED oils are obtained chiefly from certain seeds and kernels of fruits, by thoroughly pounding them in a stone mortar, or, where the quantities are large, grinding them in mills, and then including them in a canvas bag, which is wrapt in a hair-cloth, and strongly pressed betwixt iron plates. The canvas, if employed alone, would be squeezed so close to the plates of the press, as to prevent the oil from running down: by the interposition of the hair-cloth a free passage is allowed it.

SUNDRY machines have been con-

trived, both for grinding the subject and pressing out the oil, in the way of business. To facilitate the expression, it is customary to warm either the plates of the press; or the subject itself after the grinding, by keeping it stirring in a proper vessel over the fire; the oil, liquified by the heat, separates more freely and more plentifully. When the oil is designed for medicinal purposes, this practice is not to be allowed; for heat, especially if its degree is sufficient to be of any considerable advantage for promoting the separation, renders the oil less soft and palatable, impresses a disagreeable flavour, and increases its

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disposition to grow rancid: hence the Colleges both of London and Edinburgh expressly require the operation to be performed without heat.

Nor are the oils to be kept in a warm place after their expression. Exposed but for a few days to a heat no greater than that of the human body, they lose their emollient quality, and become highly rancid and acrimonious. Too much care cannot be taken for preventing any tendency to this acrid irritating state in medicines so often used for abating immoderate irritation.

So much are these oils disposed to this injurious alteration, that they frequently contract an acrimony and rancidity while contained in the original subjects. Hence great care is requisite in the choice of the unctuous seeds and kernels, which are often met with very rancid; almonds are particularly liable to inconveniencies of this kind.

Expressed oils are prepared for mechanic uses from sundry different subjects, as nuts, poppy-seed, hemp-seed, rape-seed, and others. Those directed for medicinal purposes in the London and Edinburgh Pharmacopœias, are,

OLEUM AMYGDALINUM.

*Oil of almonds.
Lond. and Edinb.*

OLEUM SEMINUM LINI.

*Oil of lintseed.
Lond.*

OLEUM SEMINUM SINAPI.

*Oil of mustard-seed.
Lond.*

THE oil of almonds is prepared from the sweet and bitter almonds indifferently; the oils obtained from both sorts being altogether the same.

Nor are the differences of the other oils very considerable, the discriminating qualities of the subjects not residing in the oils that are thus obtained by expression: the oil of mustard-seed is as soft, insipid, and void of pungency, as that of sweet almonds, the pungency of the mustard remaining entire in the cake left after the expression. The several oils differ in some of their properties from one another; but in medicinal qualities they appear to be all nearly alike, and agree in one common emollient virtue. They soften and relax the solids, and obtund acrimonious humours; and thus become serviceable internally in pains, inflammations, heat of urine, hoarseness, tickling coughs, &c. in glysters, for lubricating the intestines, and promoting the ejection of indurated feces; and in external applications, for tension and rigidity of particular parts. Their common dose is half an ounce: in some cases, they are given to the quantity of three or four ounces. The most commodious forms for their exhibition, we shall see hereafter in the chapter of Emulsions.

THE oils expressed from aromatic substances, differ from the foregoing, in retaining for the most part an admixture of the aromatic nature of the subject. Thus nutmegs and mace yield, upon expression, an oil impregnated with the flavour of the spices; and an oil expressed from aniseeds, has a great share of the peculiar smell of the seeds. A purgative oil also is extracted in America from the purgative seeds of the *ricinus*. It does not appear that other qualities of vegetables are communicated to their expressed oils.

The rinds of the several varieties of oranges, lemons, and citrons, yield by a kind of expression their essen-

essential oils almost pure, and nearly similar to those which are obtained from them by distillation. The essential oils, in which the fragrance and aromatic warmth of these fruits reside, are contained in numerous little vesicles, which may be distinguished by the naked eye, spread all over the surface of the peel. If the rind is cut in slices, and the slices separately doubled or bent in different parts, and squeezed between the fingers, the vesicles burst at the bending, and discharge the oil in a number of fine slender jets. A glass plate being set upright in a glass or porcelaine vessel, and the slices squeezed against the plate, the little jets unite into drops upon the plate, and trickle down into the vessel beneath. But though this process affords the true native oil, in the same state wherein it existed in the subject, unaltered by fire or other agents, it is

not practicable to advantage, unless where the fruit is very plentiful; as only a small part of the oil it contains can thus be extracted or collected.

The oil is more perfectly separated by rubbing the rind upon a lump of sugar. The sugar, by the inequality of its surface, produces the effect of a rasp, in tearing open the oily vesicles; and in proportion as the vesicles are opened, the sugar imbibes the oil. When the outward part of the lump is sufficiently moistened, it is scraped off, and the operation continued on the fresh surface. The oil thus combined with the sugar, is fit for most of the uses to which it is applied in a fluid state. Indeed the pure essential oils, obtained by distillation, are often purposely mixed with sugar, to render their use the more commodious.

C H A P. III.

INFUSIONS *in different* MENSTRUUA.

S E C T. I.

INFUSIONS *and* DECOCTIONS *in* WATER.

WATER, the direct menstruum of gums and salts, extracts readily the gummy and saline parts of vegetables. Its action, however, is not limited to these; the resinous and oily principles being, in most vegetables, so intimately blended with the gummy and saline, as to be in great part taken up along with them: some of the resinous cathartics, and most of the aromatic herbs, as well as bitters and astringents, yield to water the greatest part of their smell, taste, and medicinal virtue. Even of the pure essential oils, and odorous resins of vegetables, separated from the other principles, water imbibes a part of the flavour; and by the artificial admixture of gummy or saline matter, the whole substance of the oil or resin is made dissoluble in water.

Of pure salts, water dissolves only certain determinate quantities: by applying heat, it is generally enabled to take up more than it can do in the cold, and this in proportion to the degree of heat; but as the liquor cools, this additional quantity separates, and the water

retains no more than it would have dissolved without heat. With gummy substances, on the other hand, it unites unlimitedly, dissolving more and more of them till it loses its fluidity. Heat expedites the action of the water, but cannot enable it to take up more than it would do by allowing it longer time in the cold. The active parts extracted from most vegetables by water, and oils and resins made soluble in water by the artificial admixture of gum, partake of this property of pure gums, being dissoluble without saturation.

It has been imagined that vegetables in a fresh state, while their oily, resinous, and other active parts, are already blended with a watery fluid, would yield their virtues to water more freely and more plentifully, than when their native moisture has been dissipated by drying. Experience, however, shows, that dry vegetables in general give out more than fresh ones, water seeming to have little action upon them in their recent state. If, of two equal quantities of mint, one be infused
fresh

fresh in water, and the other dried, and then infused in the like quantity of water for the same length of time, the infusion of the dry herb will be remarkably the strongest: and the case appears to be the same in all the vegetables that have been tried.

In all the preparations described in this chapter, it is to be understood that the subjects must be moderately and newly dried; unless when they are expressly ordered to be taken fresh; in which case it is to be judged that their virtues are destroyed or impaired by drying.

The native colours of many vegetables are communicated to water along with their medicinal matter; many impart a colour different from their own; and others, though of a beautiful and deep colour them-

selves, give scarcely any to the menstruum. Of the first kind are the yellow and red flowers; of the second, the leaves of most plants; of the third, some of the blue flowers, as those of cyanus and larkspur. Acid liquors change the infusions of most flowers, the yellow ones excepted, to a red; and alkalis, both fixed and volatile, to a green.

From animal-substances, water extracts the gelatinous and nutritious parts, whence glues, jellies, broths, &c.; and along with these, it takes up principles of more activity, as the acrid matter of cantharides. It dissolves also some portion of calcined calcareous earths, both of the animal and of the mineral kingdom, but has no action on any other kind of earthy matter.

ARTICLE I. *Infusions in Water.*

INFUSUM CARDUI.

Infusion of carduus.

Take an ounce of the dried leaves of carduus benedictus, and a pint of common water. Let them steep for six hours, without heat; and then filtre the liquor through paper.

By this management only the finer parts of the carduus are extracted, and the infusion proves an agreeable light bitter; it sits easier on the stomach than any other medicine I know of the bitter kind; whereas, by long-continued maceration, or by the application of heat, the grosser and more ungrateful parts are taken up, and the liquor becomes nauseous, so as to provoke vomiting. I have often given the light infusion with great benefit, in weaknesses of the stomach, where the common bitters did not agree.

It may be flavoured at pleasure with aromatic materials. Instead of pure water, a mixture thereof with some grateful distilled spirituous water, as twelve ounces of common water, and four of the spirituous water of orange-peel, may be used for the menstruum. The little quantity of spirit contained in this compound will not considerably vary the dissolving power of the water.

MANY other vegetables may be advantageously treated in the same manner. From those which are weak in virtue, rich infusions may be obtained, by returning the liquor upon fresh quantities of the subject; the water loading itself more and more with the active parts. These loaded infusions are doubtless applicable to valuable purposes in medicine, as they contain in a small

compass the finer, more subtle, and active principles of vegetables, in a form readily miscible with the fluids of the human body.

TINCTURA MENTHÆ.

Tincture of mint.

Edinb. +

Take half an ounce of the dry leaves of spearmint, and a pint of simple mint-water. Steep them in a close vessel in a warm place for four hours, and then strain out the tincture.

THE distilled water of mint is impregnated with as much of the volatile parts of the herb as water can be made to retain by distillation. By infusion, however, it still takes up more, being equally effectual as a menstruum with fresh water; hence the tincture proves very rich in the virtue of the mint. This is another useful method of obtaining strong infusions from vegetables, and it may be varied at discretion: the distilled water of one plant may be employed as a menstruum for another.

INFUSUM CORTICIS PERUVIANI.

Infusion of Peruvian bark.

Take an ounce of Peruvian bark reduced into fine powder, and twelve ounces of water. Macerate without heat for twenty-four hours, occasionally shaking the vessel; then pour off the clear liquor, and pass it through a fine strainer.

THE extraction of the virtues of Peruvian bark, with aqueous liquors, has hitherto been attempted by strong coction: But this drug, contrary to most other vegetables, has lately been observed to give out more to cold than to boiling water.

In boiling, a resinous matter containing the astringency of the bark is hastily melted out by the heat, but not truly dissolved by the water; and hence, in cooling, it begins to separate, renders the liquor turbid, and at length settles to the bottom: whereas by maceration in cold water, the astringent and bitter parts are gradually extracted together, and the former as well as the latter are retained by the water in a state of perfect solution. The infusion appears to be one of the best preparations of the bark for weak stomachs, and may be given in doses of two or three ounces in intermitting fevers, and in other disorders where the corroborating virtues of bark are required. 'We suppose, that in many cases this preparation may be taken all at once.'

AQUA PICEA.

Tar water.

Take of

Tar, two pounds;

Water, one gallon.

Stir them strongly together with a wooden rod; and after standing to settle for two days, pour off the water for use.

TAR-WATER has lately been recommended to the world as a certain and safe medicine in almost all diseases; a slow yet effectual alterative in cachexies, scurvies, chlorotic, hysterical, hypochondriacal, and other chronical complaints; and a sudden remedy in acute distempers which demand immediate relief, as pleurisies, peripneumonies, the small-pox, and all kinds of fevers in general. The medicine, though certainly far inferior to the character that has been given of it, is doubtless in many cases of considerable utility: it sensibly raises the pulse; and occasions some considerable evacuation,

ation, generally by perspiration or urine, though sometimes by stool or vomit. Hence it is supposed to act by increasing the vis vitæ, and enabling nature to expel the morbid humours.

I shall here insert, from the first public recommender of this liquor (Bishop Berkeley), some observations on the manner of using it. "Tar-water, when right, is not paler than French, nor deeper coloured than Spanish white-wine, and full as clear; if there be not a spirit very sensibly perceived in drinking, you may conclude the tar-water is not good. It may be drank either cold or warm. In colics, I take it to be best warm. As to the quantity, in common chronical indispositions, a pint a day may suffice, taken on an empty stomach; at two or four times, to wit, night and morning, and about two hours after dinner and breakfast: more may be taken by stronger stomachs. But those who labour under great and inveterate maladies, must drink a greater quantity, at least a quart every twenty-four hours. All of this class must have much patience and perseverance in the use of this, as well as of all other medicines, which, though sure, must yet in the nature of things be slow in the cure of inveterate chronical disorders. In acute cases, fevers of all kinds, it must be drank in bed, warm, and in great quantity (the fever still enabling the patient to drink) perhaps a pint every hour, which I have known to work surprising cures. But it works so quick, and gives such spirits, that the patients often think themselves cured before the fever has quite left them."

Notwithstanding these encomi-

ums, tar-water seems to be fast losing its reputation. It is not probable that water can take up any of the more active principles of the tar; and it would perhaps be more convenient to separate its acid by distillation, and mix it with water occasionally: for it is pretty certain, that the water can only take up the acid of the tar, perhaps charged with a very small quantity of oily matter in the state of an acid soap.

AQUA CALCIS SIMPLEX.

Simple lime-water.

Lond.

Take a pound of quicklime, and a gallon and a half of water. Pour the water gradually upon the lime, and when the ebullition is over, let the whole stand to settle; then filtre the liquor through paper.

Edinb.

Take half a pound of fresh-burnt quicklime, put it into an earthen vessel, and gradually sprinkle upon it four ounces of water, keeping the vessel shut whilst the lime grows hot and falls into powder. Then pour upon it twelve ounces of water, and mix the lime thoroughly with the water by stirring. After the lime has subsided renew the stirring; and let this be done about ten times, always keeping the vessel shut (during the ebullition) that the access of the air may be the more effectually prevented. Lastly, let the water be filtered through paper placed in a funnel close shut at its top, and it must be kept in very close vessels.

THE reason of adding the water by degrees to the lime is, that when poured on at once, it reduces the

the external part to a kind of muddy substance, or soft paste, which in some measure defends the internal part from being acted upon by the water. It does not appear that the different proportions of water in the two above prescriptions, occasion any sensible difference in the strength of the product; the quick-lime is far from yielding all its soluble parts to either proportion; the remainder giving a strong impregnation to many fresh quantities of water, though not so strong as to the first. The caution of keeping the water in close-stopt vessels ought to be strictly attended to; for in open ones the calcareous matter dissolved in the liquor soon begins to separate, and forms a white crust upon the surface. This crust is not of a saline nature, as some have imagined; but an insipid earth, no longer miscible with watery liquors. The theory of the production of this earth will be easily understood from what we have said on the article *FIXED AIR*. The separation first takes place at the surface, as being the part immediately applied to the common air: as long as the crust remains entire, the closeness of its texture so excludes the air, that the rest of the matter still remains impregnated with lime; but when this pellicle is broke by any means, it soon sinks to the bottom, and exposes a new surface for the separation of the lime. In this way a succession of crusts and precipitations are formed, till the whole of the once caustic and soluble quick-lime is now found at the bottom of the vessel in the state of a mild insoluble earth, leaving the water perfectly insipid.

The formation of these crusts, and their successive precipitations, are owing to the absorption of fixed air or aerial acid from the atmosphere: and the mild inso-

luble state of these precipitations is also owing to the same cause. See article *FIXED AIR*.

Lime-water has been thought of great service in scrophulous complaints; but perhaps on no very good foundation. It has also been used both internally and externally for various affections of the skin. It seems to be very considerably astringent, and has been useful in some kinds of alvine fluxes, in diabetes, leucorrhœa, and in sundry other disorders proceeding from a laxity or debility of the solids.

Its more common use is in affections of the stomach accompanied with acidity and flatulence. For which last complaint, the mild, or aerated earths are less proper on account of the separation of air on their meeting with an acid in the stomach. Lime-water is also capable of dissolving mucus; and may therefore be used where a redundancy of the intestinal mucus affords a nidus for worms, or gives rise to other complaints. It has also been found, that lime-water injected into the anus immediately kills ascarides. The lithontriptic powers of lime-water seem at present to be much doubted. Lime-water is given in doses proportioned to the nature of the complaint; in some cases, as in diabetes, it may be given in divided portions to the extent of two quarts a-day. It is used externally for washing what are called *soul* or *ill-conditioned ulcers*: it is also injected into the vagina and other parts affected with preternatural discharges from laxity.

The use of lime-water in scurvy is very doubtful.

AQUA CALCIS COMPOSITA.

Compound lime-water.
Edinb. †

Take

Take of

Sassafras, root and bark, shaved,
two ounces;

Nutmegs, well bruised, three
drams;

Liquorice, sliced, one ounce;

Lime-water, fresh prepared, four
pints.

Digest them together for two days
in a very close vessel; and then
strain the liquor.

AQUA CALCIS MINUS COMPOSITA.

*Lime-water less compounded.
Lond.*

Take of

Liquorice, one ounce;

Sassafras bark, half an ounce;

Simple lime-water, six pints.

Macerate without heat for two
days, and then strain off the li-
quor.

AQUA CALCIS MAGIS COMPOSITA.

*Lime-water more compounded.
Lond.*

Take of

Guaiacum wood, shaved, half a
pound;

Liquorice, one ounce;

Sassafras bark, half an ounce;

Coriander seeds, three drams;

Simple lime-water, six pints.

Macerate without heat for two
days, and then strain off the li-
quor.

THIS last water has been used for
some time in our hospitals, under
the title of AQUA LIBERANS. As
the guaiacum wood difficultly com-
municates its virtues to the cold li-
quor, some have proposed boiling it
in the lime-water before the other
ingredients are added; but though
this treatment more perfectly ex-
tracts the virtues of the wood, it

very much injures those of the lime-
water; greatest part of the matter
it had taken up from the lime be-
ing separated and thrown off in the
boiling. Nor indeed is there any
occasion to have recourse to expe-
dients of this kind; the quantity of
the wood in the above prescription
being so large, that the liquor re-
ceives a sufficient impregnation from
it by maceration in the cold. If,
however, on this or other occasions,
it should be thought expedient to
increase the dissolving power or
lime-water by boiling, we may do
it without any injury to the lime-
water, by the method directed by
the London college for obtaining
a solution of sulphur in this men-
struum, viz. by adding some quick-
lime in substance, which will con-
tinue to give a fresh impregnation
to the water, after the lime at first
dissolved in it has been separated by
the boiling.

In all these compositions, the ad-
ditional articles take off the ill fla-
vour of the lime-water, render it
more grateful both to the palate and
stomach, and at the same time con-
siderably promote its medicinal ef-
ficacy, especially when intended a-
gainst cutaneous disorders. They
may be taken in the same quanti-
ties as the simple lime-water, and
continued for some time; the pa-
tient keeping moderately warm
during their use: 'it is however
found, that the lime is soon preci-
pitated in its mild form, by a be-
ginning fermentation in the infu-
sion.'

'INFUSUM AMARUM.

Bitter infusion.

Edinb.

'Take of

Gentian root, half an ounce;

Dried peel of Seville oranges, one
dram;

Cq.

Coriander seeds, half a dram;
Proof spirit, four ounces;
Water, one pound.

First pour on the spirit, and three hours thereafter add the water; then macerate without heat for a night, and strain.

In the former edition of the Edinburgh Pharmacopœia, the water was directed to be boiling: this was at least unnecessary, and was probably liable to the objections observed against decoctions (See DECOCTIONS). The propriety of substituting the orange-peel to the lesser centaury tops, will appear from the remark of the committee of the London college on the infusum amarum simplex of their Pharmacopœia; the proof spirit is also an useful addition to the infusum amarum as it now stands in the Edinburgh Pharmacopœia: besides that it assists in extracting the resinous parts, and preserving the infusion from fermentation, it communicates an agreeable pungency to the liquor; to answer in some measure these intentions, it was formerly directed to add to the filtrated liquor a quantity of aqua aromatica. This was certainly a piece of very bad pharmacy: for, besides that the spirit in this preparation, when diluted with the water of the infusion, was now no longer able to retain the suspended matter, it would also dispose the infusion to part with its proper extractive matter; and in this way the resinous matter of the aqua aromatica, and the gummy parts of the infusum amarum, would both in some measure separate to the bottom of the vessel: by the formula now laid down, the infusion contains the different principles of the ingredients in a manner more nearly approaching to their natural and entire state.

INFUSUM AMARUM SIMPLEX.

Simple bitter infusion.
 Lond.

Take of

Gentian root,

Fresh yellow rind of lemon peel carefully freed from the inner white part, each half an ounce.

Dry yellow rind of Seville orange peel, freed in like manner from the white, one dram and a half;

Boiling water, three quarters of a pint.

Macerate for an hour or two, then filtre the liquor through paper, or pass it through a strainer, without pressure.

BOTH these liquors are very elegant and useful bitters, the peels communicating a fine flavour, which is the principal addition that the gentian stands in need of. The committee of the London college observe, that "most of the ingredients which usually enter the composition of bitter infusions, being prepared by them separately, amongst all the strong bitters, gentian gave the most unexceptionable colour, but it wants the assistance of some ingredient to furnish an acceptable flavour; scarce any of the bitters accompanied with flavour, such as zedoary, calamus aromaticus, and the like, appeared to be truly grateful, except orange-peel and cardamom seeds; but cardamom seeds are mucilaginous, and render the liquor cloudy, and orange-peel is accompanied with a hot oil that requires it to be but sparingly used; lemon-peel, in its outer rind, to which all its flavour is confined, is not a bitter, but supplies the gentian most successfully with
" what

"what is wanted; though the composition, by a moderate addition of orange-peel, becomes yet more perfect."

'We would propose, that this infusion, like the former, should be prepared with cold water and a proper proportion of proof-spirit.'

INFUSUM AMARUM PURGANS.

Purging bitter infusion.
Lond.

Take of

Senna,
Yellow rind of lemon-peel, fresh,
each three drams;
Gentian root,
Yellow rind of Seville orange-peel, dry;
Lesser cardamom seeds, freed from the husks, each half a dram;
Boiling water, five ounces by measure.

Macerate them together, and when cold, strain off the liquor.

INFUSUM AMARUM cum SENNA.

Bitter infusion with senna.
Edinb. +

Take of

Senna, one dram;
Gentian root,
Sweet fennel seeds, each half a dram;
Boiling water, a quarter of a pint.
Infuse them for four hours, and then strain the liquor.

This infusion may likewise be prepared with two, three, or more times the quantity of senna.

* Both these infusions might also be prepared with cold water and a proper proportion of spirit; but when that method is followed, it is proper that they should stand a little longer in infusion.'

BOTH these are useful purging

bitters. The quantities here prescribed are intended for one dose: the first is the largest, and the other the smallest dose, that senna is usually given in.

INFUSUM SENNAE COMMUNE.

Common infusion of senna.
Lond.

Take of

Senna, an ounce and a half;
Crystals of tartar, three drams;
Lesser cardamom seeds, freed from the husks, two drams;
Water, one pint.

Boil the crystals of tartar in the water until they are dissolved; then pour the water, whilst it continues boiling, upon the other ingredients; and when cold, strain off the liquor for use.

IN our former pharmacopœia, an alkaline salt was used in the infusion of senna, instead of the acid one here directed. The first was supposed to promote the operation of the medicine, by superadding a degree of purgative virtue of its own, and by enabling the water to extract somewhat more from the capital ingredient than it would be capable of doing by itself; whilst acids have rather a contrary effect. Experience, however, has sufficiently shown (as the committee assure us), "that this infusion, and the following one with lemon-juice, do not fail in their intention; and in a medicine, very nauseous to many, it is of principal consequence to prepare it so, that the lightest and least disgustful parts may be extracted." Alkaline salts increase the offensiveness of the senna, whilst crystals of tartar considerably improve the colour of the infusion, and likewise render the taste to some persons less disagreeable. Soluble tartar

tartar should seem a good ingredient in these kinds of compositions; as it not only improves the taste, but promotes the purgative virtue of the medicine; this addition also renders the infusion less apt to gripe, or occasion flatulencies.

• **INFUSUM TAMARINDO-
CUM cum SENNA.**

*Infusion of tamarinds with senna.
Edinb.*

Take of

- Tamarinds, six drams;
- Crystals of tartar,
- Senna, of each one dram;
- Coriander seeds, half a dram;
- Red candied sugar, half an ounce;
- Boiling water, eight ounces.

Macerate in a close earthen vessel, which has not been vitrified with lead; stir the liquor now and then, and after it has stood four hours strain it. It may also be made with double, triple, &c. the quantity of senna.

• BOTH these infusions might be made with cold water, whereby the cardamom seeds of the first, and the coriander seeds of the other, would probably be extracted in a more perfect state; but the crystals of tartar are so difficultly soluble in cold water, that for extemporaneous use it is in some measure necessary to prepare them in the manner here directed: it is not indeed probable, that when such soluble matters as acids and sugar are presented to water, that the water shall be able to extract such a quantity of the finer volatile part of aromatics, as to afford any considerable flavour to the liquor: where an aromatic is required, we would therefore propose, that some agreeable aromatic water should be mixed with the liquor immediately before swallowing it; or that a quantity of an aromatic oil

should be incorporated with the cold infusion by means of gum, or a part of the sugar which we might reserve for that purpose. It is a very necessary caution not to make this infusion in vessels glazed with lead, otherwise the acid might corrode the lead, and communicate its poisonous effects to the infusion.

• Both these infusions are mild and useful purges; the latter in particular, is excellently suited for delicate stomachs, at the same time that it is very much calculated for febrile and other acute diseases. It is observable, that sugar added to neutral salts, rather increase than diminish their nauſeousness; but when used along with an acid, such as tamarinds, or a salt wherein the acid predominates, as in crystals of tartar, it is found very much to improve their taste: the acid in this infusion, or rather the combination of acid and sweet, are found to cover the taste of the senna very effectually; the aromatic serves also the same purpose, but would perhaps be better applied in the way we have proposed.

**INFUSUM SENNÆ
LIMONIATUM.**

*Infusion of senna with lemon.
Lond.*

Take of

- Senna, an ounce and a half;
- Yellow rind of lemon-peel, fresh, one ounce;
- Lemon juice, one ounce by measure;
- Boiling water, one pint;
- Macerate them together, and when cold, strain off the infusion.

THIS is a very pleasant and sufficiently efficacious purge: the committee observe, that it is the most agreeable form they have been able to contrive for the exhibition of senna

senna to such as are more than ordinarily offended with its flavour. The dose is from two ounces to four.

INFUSI SENNÆ UNCIÆ
QUATUOR.

A four ounce infusion of senna.

Edinb. +

Take of

Senna, three drams;

Ginger, one scruple;

Boiling water, four ounces.

Infuse for four hours, and then strain off the liquor.

THIS infusion is tolerably grateful, the ill flavour of the senna being in good measure covered by the ginger; the quantity of which is here increased to double of that in former editions of the pharmacopœia. Formerly two drams of the greater water figwort were added. The water figwort has been discovered to be the Brasilian herb *ique-taia*, celebrated as a specific corrector of the flavour of senna: that plant, however, has not been found from experience to answer this purpose so effectually as it was supposed to do before it was commonly known.

‘INFUSUM RHEI.

Infusion of rhubarb.

Edinb.

Take of

Rhubarb, half an ounce;

Boiling water, eight ounces;

Spirituos cinnamon water, one ounce.

‘Macerate the rhubarb in a close vessel with the boiling water for a night; then having added the cinnamon water, strain the liquor.

‘IN this infusion cold water might also perhaps be employed with advantage; we also object to the spirituous cinnamon water on the same

grounds as we did before to the aqua aromatica in the infusum amarum of the former edition of the Edinburgh pharmacopœia:’ this, however, appears to be one of the best preparations of rhubarb, when designed as a purgative; water extracting its virtue more effectually than either vinous or spirituous menstrua: in this respect rhubarb differs from most of the other vegetable cathartics.

TINCTURA ROSARUM.

Tincture of roses.

Lond.

Take of

Red rose buds, freed from the white heels, half an ounce;

Strong spirit (called oil) of vitriol, one scruple;

Boiling water, two pints and a half;

Double refined sugar, one ounce and a half.

First mingle the spirit of vitriol with the water, in a glass or glazed earthen vessel, and in this mixture macerate the roses; when the liquor is grown cold, strain it, and add the sugar.

‘INFUSUM *vulgo* TINCTURA
ROSARUM.

‘*Infusion commonly called tincture of roses.*

Edinb.

‘Take of

Red roses dried, one ounce;

Boiling water, five pounds;

Vitriolic acid, one dram;

White sugar, two ounces.

‘Macerate the roses with the boiling water in an unglazed vessel four hours; then having poured on the acid, strain the liquor, and add the sugar.’

SOME have directed the oil of vitriol to be dropped upon the roses before

before the water is put to them; but this method is certainly faulty: for such of the roses as this caustic liquor falls upon undiluted, will be burnt up by it, and have their texture destroyed. Others have made an infusion of the roses in water first, and then added the acid, from an apprehension, that if this acid is added to the water, it would weaken its power as a menstruum; but, as the committee observe, whatever the acid spirit will hinder the water from extracting, it must precipitate if added afterwards; though, in this preparation, the oil of vitriol bears so small a proportion to the water, that its effect, in this respect, will be very little; and it appears to be of little consequence which of the two ways be followed, only that by the above formula the vessels are exposed a shorter time to the action of the acid.' The infusion should be made in a glass or stone-ware vessel, rather than a glazed earthen one; for the acid will be apt to corrode the glazing of the latter.

This tincture is of an elegant red colour, and makes a very grateful addition to juleps in hæmorrhagies, and in all cases that require mild coolers and subastringents: it is sometimes taken with boluses or electaries of the bark, and likewise makes a good gargle; but its virtues are to be ascribed chiefly, or perhaps solely, to the vitriolic acid.'

' POTIO CRETACEA.

Chalk julep.
Edinb.

- ' Take of
- Prepared chalk, one ounce;
- Purest refined sugar, half an ounce;
- Mucilage of gum arabic, two ounces;
- Rub them together; and add by degrees,

3

Water, two pounds and a half;
Spirituos cinnamon water, two ounces.

' Mix them.

' In the former edition of the Edinburgh Pharmacopœia, a preparation of this kind stood among the decoctions, and the chalk was directed to be boiled with the water and gum: by the present formula, the chalk is much more completely suspended by the mucilage and sugar, which last gives also to the mixture an agreeable taste; it is proper to employ the finest sugar, as the redundant acid in the coarser kinds might form with the chalk a kind of phosphoric salt. It would perhaps have been more proper to have added an aromatic, by suspending the entire powder of cinnamon, or its oil, by means of the mucilage and sugar: the method here directed is, however, less exceptionable in this than in many other preparations, as the precipitated matter of the spirituous water will probably be inviscated in the saccharine and mucilaginous matter. This is a very elegant form of exhibiting chalk, and is an useful remedy in diseases arising from, or accompanied with, acidity in the primæ viæ. It has been most usually employed in fluxes proceeding from that cause. At the same time that the mucilage serves to keep the chalk uniformly diffused, it also considerably improves its virtues, by sheathing the internal surface of the intestines so often abraded in these affections. It is indeed probable, that chalk, as being somewhat astringent, is in some of these complaints preferable to magnesia; both, however, are improper in dysentery, or other fluxes attended with putrescent matter in the primæ viæ, or a general tendency to a putrefaction of the fluids. See PUTREFACTION.'

' MU.

• **MUCILAGO GUMMI ARABICI.**

• *Mucilage of gum arabic.*
Edinb.

• Take of

Gum arabic, beat into powder,
and warm water, of each equal
weights.

• Digest, and frequently stir them
till the gum is dissolved, then press
the solution through lint.

• It is very necessary to pass the mu-
cilage through lint, in order to
free it from pieces of wood and
other impurities, which always
adhere to the gum; the lint may
be placed in a funnel.

• **MUCILAGE** of gum arabic is
very useful in many operations in
pharmacy (see **GUMS** and **ESSEN-
TIAL OILS**); it is also much used
for properties peculiar to those sub-
stances of its own class, and of all
others seems to be the purest gum.
For its medicinal properties, see
**GLUTINOUS, VEGETABLE, and A-
NIMAL SUBSTANCES.**

• **MUCILAGO GUMMI TRAGACANTHÆ.**

• *Mucilage of gum tragacanth.*
Edinb.

• Take of

Gum tragacanth, beat, one
ounce;

Hot water, eight ounces.

• Macerate twenty-four hours; then
mix them, by rubbing briskly,
that the gum may be dissolved;
and press the mucilage through
lint.

• This gum is more difficultly so-
luble in water than gum arabic, and
seems to be considerably more ad-
hesive; it is therefore fitter for form-
ing troches, and such like purposes.
It has been thought to be more pec-
uliarly what has been called a pec-
toral, than the other gums: but

this does not seem to be certainly
founded. This mucilage is perhaps
preferable to the foregoing in those
operations in pharmacy where much
tenacity is required; as in the sus-
pension of mercury, or other pon-
derous bodies.

INFUSUM LINI.

Infusion of linseed.

Take of

Linseed, whole, two spoonfuls;

Liquorice, sliced, half an ounce;

Boiling water, four pints.

Let them stand in infusion by the fire
for some hours, and then strain
off the liquor.

An ounce of coltsfoot leaves is
sometimes added to these ingredi-
ents; which addition procures this
medicine the title of **INFUSUM PEC-
TORALE**, *Pectoral infusion*. Both in-
fusions are soft, emollient, mucilagi-
nous liquors; and as such they are
directed in defluxions of thin acrid
rheums, and erosions of the vessels.
They are given to the quantity of a
pint a-day.

INFUSUM ANTISCORBUTICUM.

Antiscorbutic infusion.

Take of

Buckbean leaves, two ounces;

Curassao oranges, half an ounce;

Compound horse-radish water,
four ounces;

Common water, four pints.

Let the common water, boiling, be
poured on the buckbean and o-
range, and suffered to stand in a
close vessel for a night; then strain
out the liquor, and add to it the
horse-radish water.

• We object to the boiling water and
the after addition of the com-
pound horse-radish water, for the
reasons we have already noticed.

THIS infusion is a very useful, and
not inelegant antiscorbutic: buck-

T bean

bean appears from experience to be a very efficacious herb in this intention; the aromatic material, here joined to it, alleviates its ill flavour, and at the same time promotes its virtue. A quarter of a pint of the liquor may be taken three or four times a-day.

INFUSUM CEPHALICUM.

Cephalic infusion.

Take of

Wild valerian root, two ounces;
Rosemary, or sage, half an ounce;
Aromatic water, four ounces;
Common water, four pints.

Let the common water be poured, boiling, on the herb and root, and suffered to stand for a night in a close vessel; then strain out the infusion, and add to it the aromatic water.

‘We also object to this method on the same grounds as we did to that of the preceding article.’

THIS infusion is calculated against epileptic disorders, and other like affections of the nervous system. The dose is a quarter of a pint, to be taken twice a day.

INFUSUM ALCALINUM.

Alkaline infusion.

Take of

Salt of tartar, half an ounce;
Saffron, half a dram;
Liquorice root, two ounces;
Boiling water, three pints.

Let them stand together in a warm place for eight or ten hours, and then strain out the liquor for use.

THIS infusion is of service in a lentor or viscosity of the blood and juices, the consequence of an obstructed perspiration, and oftentimes the origin of inflammatory distempers: it attenuates thick humours, and promotes the natural secretions. It is to be taken warm,

in little quantities at a time, but frequently repeated.

‘This, we presume, is a very unscientific and inert preparation; and the diseases it is here alleged to remove, never perhaps existed in nature.’

INFUSUM DIURETICUM.

Diuretic infusion.

Take of

Wormwood leaves, dried, half an ounce;
Salt of tartar, two scruples;
Compound juniper water, two ounces;
Common water, twelve ounces.

Pour the common water, boiling, on the wormwood and salt of tartar; and when grown cold, strain off the liquor, and mix with it the juniper water.

‘We object to the boiling water, and the compound spirituous water, for the reasons before advanced.’

THIS infusion is much of the same nature with the foregoing. It is directed in the obstructions of the viscera, which frequently succeed a long continuance of bilious fevers, or frequent relapses into them, and which generally end in a dropsy, jaundice, or irregular intermittent. The quantity here prescribed, is to be taken every day, at three doses, and a purgative occasionally interposed. If intermittent fevers return after the cure of the other disorders, they are then successfully treated by the bark. ‘These observations are to be taken with some limitation. See PERUVIANUS CORTEX.’

Preparations of this kind are likewise of considerable use in maniacal disorders; in which, as Dr Mead observes, evacuations by the kidneys are of greater consequence than is generally supposed; especially if the mania is of the furious kind,

kind, and accompanied with febrile heat. Alkaline salts, given in large doses, are here very effectual diuretics.

INFUSUM PARALYTICUM.

Paralytic infusion.

Take of

Horse-radish root, shaved,

Mustard seed, bruised, each four ounces;

Boiling water, four pints.

Let them steep together, in a close vessel, for twenty-four hours.

THIS infusion is strongly impregnated with the pungency of the mustard seed and horse-radish, which by this simple process give out the whole of their virtues. Though the medicine is designed chiefly (as its title expresses) for a stimulant in paralytic complaints, there are several other disorders in which it may be employed to good advantage; in scorbutic cases, in particular, it promises to be a remedy of great utility: it generally promotes the urinary discharge, and, if the patient is kept warm, perspiration. It is taken sometimes to half a pint twice a-day.

THEA ANTIPHTHISICA.

Antiphthetical tea.

Take of

Avens root, two ounces;

Male speedwell,

Ground-ivy, each one ounce and a half;

Liquorice, one ounce;

Sweet fennel seeds, three drams.

THESE ingredients are to be cut, bruised, and well mixed together; and half an ounce of the composition infused for a few minutes, in five or six tea-cups full of boiling water. In consumptive cases and disorders of the breast, one cup of the infusion, with a tea-spoonfull of honey, may be drank every hour or two. After the same manner, medicated teas may be prepared from other vegetable substances, as camomile flowers, linseed, orange-peel, fumitory, &c.

INFUSUM CINNAMOMI.

Infusion of cinnamon.

Take two ounces of powdered cinnamon, and two pints of boiling water. Infuse them in a close vessel, in a moderate heat, for half an hour; and then filtre the liquor.

THIS infusion is agreeably impregnated with the flavour and warmth of the spice; and may, on many occasions, supply the place of the simple cinnamon water. 'It is probable that the preparation would be more advantageously made by cold water.'

ARTICLE II. Decoctions.

THE effect of boiling differs from that of infusion in some material particulars. One of the most obvious differences is, that as the essential oils of vegetables, in which their specific odours reside, are volatile in the heat of boiling water, they exhale in the boiling along with the watery steam, and thus are lost to

the remaining decoction; whereas both in cold and hot infusions they are preserved; 'in the latter, they are by no means perfectly so.' Odorous substances, and those in general whose virtues depend on their volatile parts, are therefore unfit for this treatment. The soluble parts of these may, nevertheless, be

T 2 united

united in this form with those bodies of a more fixt nature, by boiling the latter till their virtues are sufficiently extracted, and then infusing the former in this decoction.

The extraction of the virtue of the subject is usually promoted or accelerated by a boiling heat; but this rule is less general than it is commonly supposed to be. We have already observed, that Peruvian bark gives out its virtue more perfectly by cold infusion than by coction. In some cases, boiling occasions a manifest disunion of the principles of the subject: thus, when almonds are triturated with cold water, their oil, blended with the mucilaginous or other soluble matter of the almond, unites with the water into a milky liquor called an emulsion: but on boiling them in water, the oil separates and rises to the surface; and if the most perfect emulsion be made to boil, a like separation happens.

* This also appears to take place, though in a less evident manner, in boiling sundry other vegetables; thus tobacco, asarum, and ipecacuanha, lose entirely their active powers by boiling: nor does it appear that this change is effected merely by the discharge of volatile parts. From some late experiments, it has been found, that the distilled water of ipecacuanha was infinitely less emetic than the infusion from which it was distilled, and that the boiling liquor gradually assumes a black colour, indicating some kind of decomposition of parts: the same circumstances probably take place in boiling tobacco, asarum, and perhaps all vegetables whatever, though from their not producing such sensible operations on the living body, they cannot therefore be so clearly discovered as in ipecacuanha, tobacco, or asarum. The experiments we allude to, were made by Mr Ir-

ving, a student in the college of Edinburgh; and they gained him the prize given by the Harveian Society of that place.

* It is for the above-mentioned reasons that we have proposed that many of the foregoing infusions should be made with cold water: it is, however, to be acknowledged, that it is not always absolutely necessary, and in extemporaneous practice may be often very inconvenient; it was, however, our duty to point out the advantages to be expected from this more tedious, but much more complete and elegant method.

DECOCTUM ALBUM.

The white decoction.

Lond.

Take of

Calcined hartshorn, prepared; two ounces;

Gum arabic, two drams;

Water, three pints.

Boil them till only two pints remain, and then strain off the liquor.

Edinb. +

Take of

Calcined hartshorn, prepared, one ounce;

Gum arabic, two drams;

Common water, three pints;

Cinnamon, bruised, one dram;

White sugar, two drams.

Boil the calcined hartshorn and gum in the water till only two pints remain, adding the cinnamon towards the end: in this decoction, unstrained, dissolve the sugar.

THESE decoctions are used as common drink in acute diseases attended with a looseness, and where acrimonious humours abound in the primæ viæ. The gum is added, in order to render the liquor lightly glutinous, and thus enable it to sustain more of the calx; which is the in-

ingredient that the colour, but probably not the virtue, of the medicine depends upon. Calcined hartshorn has no quality from which it seems capable either of *constringing* and strengthening the vessels, giving a greater degree of consistency to thin fluids, or obtunding *acrimonious* humours. It blunts and absorbs acid juices; but acrimony and acidity are very different: there are few (perhaps none of the acute) disorders of adults attended with the latter; and few of infants are unaccompanied therewith. Some have proposed starch as an ingredient in these kinds of decoctions; a small quantity of this soft gelatinous, farinaceous substance should seem to be greatly preferable to the earthy calx. It may be observed, that the water is not enabled by the boiling to dissolve any part of the calx; and that in the decoction, the earth is only diffused in substance through the water, as it would be by agitation. 'See CORNU CERVI CALCINATIO.'

DECOCTUM ALBUM COMPOSITUM.

Compound white decoction.

Edinb. +

Take of

- Comfrey roots,
- Tormentil roots,
- Calcined hartshorn,
- Chalk,
- White sugar, of each half an ounce;
- Cinnamon bruised, one dram;
- Common water, three pints.

Boil the roots in the common water, till such time as the liquor, when strained, will amount only to a quart, adding the cinnamon towards the end: strain the decoction; add to it the calcined hartshorn, chalk, and sugar; and mix them well together.

THIS is a very well contrived composition for the purposes of a mild, lightly incrassating restraining. A quarter of a pint, more or less, may be taken occasionally, according to the urgency of the symptoms. The calcined hartshorn and chalk appear to be the least useful of its ingredients. 'The use of this preparation may, we presume, be safely superseded by much more proper and effectual remedies.'

DECOCTUM JAPONICUM.

Japonic decoction.

Edinb. +

Take of

- The confectio japonica (described hereafter among the electaries) one ounce;
- Common water, a pint and a half;
- Spirituos cinnamon water,
- Syrup of meconium, each one ounce.

Boil the confectio in the common water, till the liquor, after straining, will amount to a pint; to which, while turbid, add the cinnamon water and the syrup.

THIS decoction is used both in draughts, and in glysters, as an anodyne and restraining in fluxes. The quantity here prescribed contains two grains and a half of opium, exclusive of the syrup: 'but the ingredients in this decoction must infallibly be impaired in their virtues by boiling; and we have no need of such a variety of prescribed forms to administer astringents by.'

DECOCTUM ad ICTERICOS.

Decoction for the jaundice.

Edinb. +

Take of

- Celandine, roots and leaves,
- Turmeric,
- Madder, each one ounce;

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Milleneder.

Millepedes, two hundred ;

Water, three pints.

Boil the celandine, turmeric, and madder, in the water, till only a quart of liquor remains after straining; then, having pressed out the juice of the millepedes, add this to the decoction when grown cold.

THE ingredients of which this decoction is composed, have been long held by many as specifics for the cure of the disease expressed in its title. The medicine, though not a little unpleasant, is well calculated to answer many useful purposes, if well managed and properly assisted. A quarter of a pint may be taken twice a-day, or oftener: 'but this decoction ought certainly never to take the room of several much more effectual remedies.'

DECOCTUM LIGNORUM.

Decoction of the woods.

Edinb.

Take of

Guaiacum saw-dust, three ounces;

Raisins of the sun, stoned, two ounces;

Sassafras wood, shaved,

Liquorice, sliced, of each one ounce;

Water, ten pounds.

Boil the guaiacum and raisins with the water, over a gentle fire, to the consumption of one half: adding, towards the end, the sassafras and liquorice. Strain out the liquor; and having suffered it to rest for some time, pour off the clear from the feces without expression.

THIS decoction is very well contrived; and if its use is duly continued, will do great service in some cutaneous diseases, 'in what has been called' foulness of the blood

and juices, and in some disorders of the breast; particularly in phlegmatic habits. It may be taken by itself in the quantity of a quarter of a pint two or three times a-day, or used as an assistant in a course of mercurial or antimonial alteratives; the patient in either case keeping warm, in order to promote the operation of the medicine. 'The saw-dust exposes a larger surface to the action of the water, than the shavings directed in the former edition of the pharmacopœia.'

'DECOCTUM ALTHÆÆ.

Decoction of marshmallows.

Edinb.

'Take of

Dried marshmallow roots, four ounces;

Raisins of the sun, stoned, two ounces;

Water, seven pounds.

'Boil to five pounds; place apart the strained liquor till the feces have subsided, then pour out the clear liquor.

'The Edinburgh College have substituted this to the more complicated formula of the *Decoction ad Nephriticos* of their former pharmacopœia, and it fully answers the intentions of that preparation: it is intended chiefly as an emollient, to be liberally drank of in nephritic paroxysms; in which cases, by softening and relaxing the parts, it frequently relieves the pain, and procures an easy passage for the fabulous matter. The medicine is now made more simple than before, without any diminution of its virtue, by the rejection of wild-carrot seed, restharrow root, figs, linseed, and liquorice. The carrot seeds were indeed unfit for this form, as they give out little of their virtue to watery liquors.

DECOC.

DECOCTUM NITROSUM.

*Nitrous decoction.**Edinb. +*

Take of

Pure nitre, half an ounce;
 White sugar, two ounces;
 Cochineal, one scruple;
 Water, two pints and a half.

Boil to two pints, then suffer the whole to rest for some time, and pour off the clear decoction.

THIS is an elegant way of disguising nitre, and rendering it agreeable to the patient; both which intentions are fully answered by the cochineal and sugar. There does not seem to be any occasion for so long boiling; for the water will dissolve a much larger quantity of the nitre and sugar than is directed above, without any heat, and it easily extracts a fine colour from cochineal.

The virtues of nitre have been already mentioned in the preceding part. This or other similar forms are the most commodious for the exhibition of it; for when given in a solid form, it often occasions great uneasiness about the stomach. Two or three ounces of this decoction may be taken for a dose.

DECOCTUM PECTORALE.

*Pectoral decoction.**Lond.*

Take of

Common barley,
 Stoned raisins,
 Figs, each two ounces;
 Liquorice, half an ounce;
 Water, four pints.

First boil the water with the barley, then add the raisins, and lastly (just before the end of the process), the figs and liquorice; the boiling is to be continued so long, that the liquor, when strained, may be no more than two pints.

Edinb. +

Take of

Stoned raisins of the sun,
 Barley, each, one ounce;
 Fat figs, in number four;
 Florentine orris root,
 Liquorice,
 Coltsfoot flowers, each half an ounce;

Water, six pints.

Boil the water with the raisins, barley, and figs, till only four pints remain; adding, towards the end, the other ingredients; then strain out the liquor for use.

BOTH these decoctions are useful soft pectorals, and very agreeable to the palate, particularly the first. They are good auxiliaries in sharp defluxions on the breast and lungs, and have sometimes done service by themselves. They may be drank at pleasure: 'it is, however, to be observed, that these sweet and mucilaginous decoctions are often hurtful, by palling the appetite; and they ought never to take the place of more effectual remedies.'

DECOCTUM SERPENTARIÆ COMPOSITUM.

*Compound decoction of snakeroot.**Edinb. +*

Take of

Virginian snakeroot, six drams;
 Edinburgh theriaca (described hereafter among the electaries) half an ounce;
 Cochineal, one scruple;
 Water, two pints.

Boil the water with the snakeroot to one half, adding the theriaca and cochineal towards the end: then strain out the liquor for use.

THIS preparation is an useful sudoriphic and alexipharmac, containing nearly all the virtue of the snake-

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root,

root, and great part of that of the theriaca. The quantity of theriaca here prescribed, holds nearly three grains and a half of opium; so that about a fifth of a grain of opium, or somewhat more, goes to an ounce measure of the decoction. 'This is a very unscientific preparation; and most of the ingredients are exceedingly improper subjects for decoction.'

AQUA HORDEATA.

Barley water.

Lond.

Take of

Pearl barley, two ounces;

Water, four pints.

First wash the barley from the mealy matter that adheres to it with some cold water; then boil it a little with about half a pint of fresh water, which will acquire a considerable tinge from it. Throw away this tinged water; put the barley into the water prescribed, made first to boil; and continue the boiling till half the water is wasted. 'The formula in the Edinburgh Pharmacopœia does not materially differ from the above.'

THIS liquor is to be drank freely, as a diluter, in fevers and other disorders: hence it is of consequence that it should be prepared so as to be as elegant and agreeable as possible; for this reason it was inserted in the pharmacopœia, and the several circumstances which contribute to its elegance set down; if any one of them is omitted, the beverage will be less grateful. However trivial medicines of this class may appear to be, they are of greater importance in the cure of acute diseases than many more laborious preparations.

MUCILAGO SEMINUM CYDONIORUM.

Mucilage of quince seeds.

Lond.

Take of

Quince seeds, one dram;

Water, six ounces by measure.

Boil them, over a soft fire, till the water grows slimy, almost like the white of an egg; then pass it through a linen cloth.

THIS is a pleasant soft mucilage, of a somewhat sweetish taste, and a light agreeable smell: in these respects, and in its easy solubility in water, it differs from the mucilage of gum tragacanth, which some have supposed it similar to; it has another difference, to its disadvantage, being apt to grow mouldy in keeping.

GELATINA CORNU CERVI.

Jelly of hartshorn.

Edinb. +

Take of

Hartshorn shavings, half a pound;

Water, three quarts;

White sugar, six ounces;

Mountain wine, a quarter of a pint;

Orange (or lemon) juice, one ounce.

Boil the hartshorn with the water by a gentle heat in a glazed earthen vessel, till two parts are wasted; strain out the remaining liquor, add to it the other ingredients, and boil the whole over a gentle fire to the consistence of a soft jelly.

JUS VIPERINUM.

Viper broth.

Lond.

Take a middle-sized viper, freed from the head, skin, and intestines, and two points of water. Boil them to a pint and a half; then

then remove the vessel from the fire; and when the liquor is grown cold, let the fat, which congeals upon the surface if the viper was fresh, be taken off. Into this broth, whilst warm, put a pullet of a moderate size, drawn and freed from the skin and all the fat, but with the flesh entire. Set the vessel on the fire again, that the liquor may boil; then remove it from the fire, take out the chicken, and immediately chop its flesh into little pieces; put these into the liquor again, set it over the fire, and as soon as it boils up pour out the broth, first carefully taking off the scum.

HERE all the circumstances subservient to the perfection of the broth are carefully set down: and even plain chicken broth for the use of the sick ought to be made in a similar manner.

This seems to be one of the best preparations of the viper; all the benefit that can be expected from that animal being by this means obtained. It is a very nutritious and restorative food: Continued for a length of time, it has sometimes done good service in leprous and other obstinate cutaneous diseases. The dried flesh of the vipers brought from abroad is not at all superior to the fresh vipers of our own country. The wines and tincture of the animal probably have little virtue: the volatile salt, however strongly recommended by some, does not appear to differ from that producible from every animal substance.

DECOCTUM ANTIHECTICUM.

Antihæctic decoction.

Take of

Comfrey root,
Eryngo root, each half an ounce;
Conserve of roses, two ounces;

Dulcified spirit of vitriol, forty drops;

Water, three pints.

Boil the water with the roots and the conserve, till one pint is wasted; then strain off the remaining liquor, and add to it the dulcified spirit.

THIS decoction is usually given in hectic cases, where thin acrimonious humours abound, and in beginning consumptions. The dose is a quarter of a pint, to be taken two or three times a-day.

‘But we presume it would be hazardous to trust to such trifling remedies; and in this, as in almost every disease, it is most useful to adapt the remedies to the particular circumstances of each case.’

DECOCTUM VULNERARIUM.

Vulnerary decoction.

Take of

The herb ground-ivy,
Plantane leaves,
White sugar, each half an ounce;
Water, three pints.

Boil the herbs in the water, so long that there may be only two pints of strained liquor; in which dissolve the sugar.

THE herbs which give virtue to this decoction, have long been celebrated as specifics for the cure of internal contusions and ulcerations, of coughs and pulmonary phthises, proceeding either from bruises, or an erosion of the viscera from a spontaneous acrimony of the humours. Though the real virtues of these plants fall short of the character which has been usually given of them, yet experience has shown that they are superior to numerous others which have been very strongly recommended.

‘We

'We presume, that no such specifics exist in nature.'

DECOCTUM ANTIFEBRILE.

Antifebrile decoction.

Take of

Virginian snake-root, bruised,
Peruvian bark, in powder, each
three drams;

Water, one pint.

Boil them to half a pint; and having strained off the liquor, mix with it, of

Spirituuous cinnamon-water, an
ounce and a half;

Syrup of clove julyflowers, two
drams.

IN the putrid malignant fever, arising from foul air in crowded hospitals and jails, this medicine has been given with remarkable success. In the low state of this dangerous disease, when the pulse, before quick, begins to sink, the stupor to increase, and petechiæ to appear; it promises to be a very useful remedy for supporting the *vis vite*, promoting a critical diaphoresis, and correcting the putrid humours. Four spoonfuls of the decoction are to be taken every four or six hours; and moderate quantities of wine or cordial boluses, with volatile salts interposed at proper intervals.

DECOCTUM FEBRIFUGUM.

A febrifuge decoction.

Take of

Camomile flowers, dried, two
ounces;

Salt of tartar, two drams;

Water, three pints.

Boil the water with the camomile-flowers, till one pint of the liquor is wasted; then strain out the remaining decoction, and dissolve in it the alkaline salt.

IN 'what has been called' a thick viscid state of the blood and juices,

and obstructions of the abdominal viscera, a quarter of a pint of this decoction, taken three or four times a day, has sometimes, 'it is said,' removed intermittent fevers, after the Peruvian bark had been tried in vain. It is nearly similar to the alkaline and diuretic infusions described above.

APOZEMA APERIENS.

Aperient apozem.

Take of

Rhubarb,

Madder, each three drams;

Salt of tartar, two drams;

Water, three pints.

Boil them together for an hour; and having strained out the decoction, add to it three ounces of syrup of ginger.

THIS promises to be a very powerful aperient and attenuating medicine, of great service in ictical and hydropic cases. The dose is three ounces, which may be repeated thrice a-day.

'We think it difficult to conceive how this preparation should be so peculiarly an aperient and attenuating medicine.'

DECOCTUM ASTRINGENS.

Astringent decoction.

Take of

Tormentil root, one ounce;

Pomegranate peel,

Plantane leaves, each half an
ounce;

Syrup of dry roses, one ounce;

Water, three pints.

Boil the water with the tormentil, granate peel, and plantane, till one pint is wasted, adding the cinnamon towards the end: then strain off the decoction, and mix it with syrup.

THE title of this preparation sufficiently expresses its virtues. The dose,

dose, in fluxes where the morbid matter has been evacuated, and astringency is the only indication, is from one to four ounces, three or four times a-day.

DECOCTUM BARDANÆ.

Decoction of burdock.

Take of

Burdock roots, two ounces;
Vitriolated tartar, one dram;
Water, three pints.

Boil the water with the roots, so long, that the liquor when strained may amount only to a quart; to which add the vitriolated tartar.

THIS decoction is drank to the quantity of a pint a-day, as a mild aperient, diuretic, and sweetener, in scorbutic and rheumatic complaints.

'We cannot discover on what grounds it can be of any material service, nor are its supposed properties clearly defined.'

DECOCTUM CAMPECHENSE.

Decoction of logwood.

Take of

Shavings of logwood, three ounces;
Cinnamon, two drams;
Water, four pints.

Boil the water with the logwood till half the liquor is wasted, adding the cinnamon towards the end of the boiling; then strain out the decoction for use.

THIS is an agreeable mild restringent in diarrhœas and other fluxes, where stronger astringents would be improper or unsafe. It is given in the hospitals in doses of a quarter of a pint three or four times a-day. It generally tinges the stools red, which has occasioned some to be alarmed, as if the colour proceeded from a discharge of

blood: the patient therefore is to be cautioned against any surprise on that account.

DECOCTUM DIURETICUM.

Diuretic decoction.

Take of

1.

Parsley, or fennel roots, one ounce;
Wild carrot seeds, three drams;
Pellitory of the wall, half an ounce;
Raisins, two ounces;
Nitre, one dram;
Water, three pints.

Boil the water with the roots, seeds, pellitory, and raisins, so long, that there may be only two pints of liquor after straining; in which dissolve the nitre.

Take of

2.

Grass-roots, two ounces;
Sorrel, or wood-sorrel leaves, one handful;
Tamarinds, an ounce and a half;
Nitre, two drams;
Barley-water, three pints.

Boil the roots in the barley-water, till one pint of the liquor is wasted, adding towards the end the sorrel, tamarinds, and nitre; then strain out the apozem for use.

Take of

3.

Marshmallow roots, fresh, one pound;
Fennel roots, half a pound;
Nitre, half an ounce;
Water, one gallon.

Boil the water with the roots, till one-fourth of the liquor is wasted; then strain off the remaining decoction, and dissolve in it the nitre.

THESE cooling aperient liquors are used like the nephritic decoction, already described, as common drink for promoting urine in nephritic diseases. They may be

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taken with safety, and often with good effect, in inflammatory cases, where the hot stimulating diuretics would be manifestly prejudicial.

DECOCTUM PERUVIANUM.

Peruvian decoction.

Take of

Peruvian bark, in powder, two ounces;

Water, three pints.

Boil them together, till one pint of the liquor is wasted, and then strain off the remaining decoction for use.

THIS decoction should be passed only through a coarse strainer, and drank whilst turbid: if suffered to stand till clear, the more efficacious parts of the bark will subside. We have formerly observed, that the virtues of this drug consist chiefly in its resinous substance, which, though it may be totally melted out by the heat of boiling water, remain only partially suspended in that menstruum. See PERUVIANUS CORTEX.

DECOCTUM SENEKÆ.

Decoction of seneka.

Take of

Seneka, rattlesnake-root, one ounce;

Water, a pint and a half.

Boil to one pint, and strain.

‘This decoction is received into the present edition of the Edinburgh Pharmacopœia, and does not materially differ from the formula here given.’

THE virtues of this decoction will be easily understood from those of the root which it is prepared from. See page 233. The dose, in hydropic cases, and rheumatic, or arthritic complaints, is two oun-

ces, to be repeated three or four times a-day according to its effect.

DECOCTUM TERRÆ JAPONICÆ.

Decoction of Japan earth.

Take of

Japan earth, two drams;

Spirituuous cinnamon water,

Syrup of quinces, each two ounces;

Common water, one pint.

Boil the common water with the Japan earth, till about one-fourth of the liquor is wasted; then suffer the decoction to settle; and having poured off the clear part, add to it the spirituuous water and the syrup.

THIS decoction is ‘said to be’ a very agreeable and useful medicine in fluxes that are not critical or symptomatic, and in a weak lax state of the intestines. A spoonful or two may be taken every hour, or oftener: thus managed, it produces much better effects than if larger doses are given at once.

FOTUS COMMUNIS.

The common fomentation.

Lond.

Take of

Abrotanum leaves, dried,

Sea wormwood tops, dried,

Camomile-flowers, dried, each one ounce;

Bay leaves, dried, half an ounce;

Water, six pints.

Lightly boil them, and strain out the decoction for use.

It is left to the choice of the apothecary to take either the male or female *abrotanum*; that is, south-ernwood, or lavender-cotton: which, though differing from one another in some respects, may be looked upon as similar with regard to the purposes for which this composition

is intended: nor indeed can either of them give much assistance to camomile flowers and wormwood. The use of this decoction is expressed in its title: spirit of wine, which is commonly added in fomentations, is left to be directed by the prescriber, in such quantity as particular cases may require.

DECOCTUM COMMUNE pro CLYSTERE.

The common decoction for glysters.
Lond.

Take of

Mallow leaves, dried, one ounce;
Camomile-flowers, dried,
Sweet-fennel seeds, each half an ounce;

Water, one pint.

Boil them together, and strain out the decoction for use.

THE title of this decoction sufficiently expresses its use, as the basis of glysters. The ingredients should be very lightly boiled, or at least the camomile-flowers and fennel-seeds not put in till towards the end, a part of the virtue of these being soon lost by boiling.

DECOCTUM COMMUNE.

Common decoction.
Edinb.

Take of

Camomile-flowers, one ounce;
Carvy seeds, half an ounce;
Water, five pounds.

Boil a quarter of an hour, and strain.

THIS decoction is intended to answer the purposes of both the foregoing. It is less loaded with the ingredients than either, but not perhaps for that reason the less useful.

It is indeed to be acknowledged, that these impregnations are for the most part unnecessary for the purpose of glysters; and in ordinary

cases the weight of the water usually solicits a discharge before these medicines can produce any effect.

FOTUS ANODYNUS.

Anodyne fomentation.

Take of

Garden-poppy heads, one ounce;

Elder-flowers, half an ounce;

Water, three pints.

Boil them till one pint is wasted, and then strain out the liquor for use.

THIS fomentation is prescribed for tumefied and inflamed parts, to abate the inflammation and pain. Whether the opiate matter in the poppy-heads contributes much to this intention, may be questioned; as the effects of the composition may be attributed perhaps more to the warm fluid softening and relaxing the skin, than to the particular qualities of the matters which it is impregnated with.

FOTUS AROMATICUS.

Aromatic fomentation.

Take of

Cloves,

Mace, each one dram;

Red wine, one pint.

Boil them a little, and strain off the liquor.

THIS preparation is intended not only as a mere topical application for external complaints, but likewise for relieving the internal parts. The pains of the bowels which accompany dysenteries, diarrhoeas, and flatulent colics, uneasiness at the stomach, and retchings to vomit, are frequently abated by fomenting the abdomen and region of the stomach with the warm liquor.

FOTUS ROBORANS.

Strengthening fomentation.

Take of

Oak bark, one ounce;

Gra.

Granate peel, half an ounce ;
 Alum, two drams ;
 Smiths forge-water (that is, wa-
 ter in which red-hot iron has
 been several times quenched)
 three pints.

Boil the water with the oak-bark
 and granate-peel to the consump-
 tion of one-third ; then strain the

remaining decoction, and dissolve
 it in the alum.

THIS is a strong astringent liquor,
 in which intention it is directed
 both as a fomentation for strength-
 ening relaxed parts, and as an in-
 jection in the fluor albus.

S E C T. II.

W H E Y S.

SERUM SOLUTIVUM.

Laxative whey.

Take of
 Damask rose-buds, fresh, one
 ounce ;

Whey, two pints.

Steep them together for a night,
 and then strain out the whey for
 use.

WHEY, thus impregnated with
 the virtues of the damask rose, op-
 erates very gently by stool ; and for
 this purpose is held by some in
 great esteem. Its action may be
 quickened, and its taste rendered
 more agreeable, by the addition of
 a suitable proportion of crystals of
 tartar.

SERUM SINAPINUM.

Mustard whey.

Take of
 Mustard-seed, bruised, three
 spoonfuls ;

Cows milk, two pints.

Set the milk over the fire to boil,
 and add to it the mustard-seed,
 that a curd may be formed, from
 which the whey is to be carefully
 separated.

THIS is not an inelegant form for
 the exhibition of mustard-seed ; its

pungency and medicinal virtues, de-
 pending thereon, being in great mea-
 sure communicated to the whey.

SERUM ALUMINOSUM.

Alum. whey.

Lond.

Take of

Cows milk, one pint ;

Alum, in powder, two drams.

Boil them till the milk is curdled,
 and then carefully separate the
 whey.

THIS medicine is a strong, tho'
 not very grateful, astringent. It is
 given in immoderate uterine fluxes,
 and sometimes in the diabetes ; in
 which last intention it is recom-
 mended by Dr Mead. The dose is
 a quarter of a pint three or four
 times a-day. It has been recom-
 mended also in intermittent fevers,
 the quantity above prescribed to be
 taken before the approach of a fit,
 divided into different doses : but in
 this disorder, great caution is re-
 quisite in the use of so strong an a-
 stringent.

'This whey has been sometimes
 used with success in cases of inflam-
 mation of the eye, depending on a
 laxity of the vessels.'

SE-

SERUM SCORBUTICUM.

*Scorbutic whey.**Lond.*

Take of

Cows milk, one pint;

Scorbutic juices, a quarter of a pint.

Boil them till the milk is curdled,

and then carefully separate the whey.

THIS whey may be used as common drink in scorbutic cases: the quantity above directed, at least, ought to be taken every day, if any considerable effect is expected from it.

S E C T. III.

VINEGARS.

VINEGAR extracts the virtues of several medicinal substances in tolerable perfection: but at the same time its acidity makes a notable alteration in them, or super-adds a virtue of a different kind; and hence it is more rarely employed in this intention than purely aqueous or spirituous menstrua. Some drugs, however, vinegar, for particular purposes, excellently assists, or coincides with, as squills, garlick, ammoniacum, and others: and in many cases where this acid is itself principally depended on, it may be advantageously impregnated with the flavour of certain vegetables; most of the odoriferous flowers impart to it their fragrance, together with a fine purplish or red colour; violets, for instance, if fresh parcels of them are infused in vinegar in the cold for a little time, communicated to the liquor a pleasant flavour, and deep purplish red colour. Vinegar, like other acids, added to watery infusions or decoctions, generally precipitates a part of what the water had dissolved.

ACETUM ROSACEUM.

*Vinegar of roses.**Edinb. +*

Take of

Red roses dried, one pound;

Strong vinegar, one gallon.

Expose them to the sun in a close vessel for forty days, and then strain off the liquor.

THIS is scarce otherwise made use of than for embrocating the head and temples in some kinds of head-ach, &c. in which it has now and then been of service. 'It has also been used for certain cases of ophthalmia.'

ACETUM SCILLITICUM.

*Vinegar of squills.**Lond.*

Take of

Dried squills, one pound;

Vinegar, six pints.

Macerate the squills in the vinegar with a gentle heat; then press out the liquor, and set it by till the feces have subsided: the vinegar being afterwards poured off, add to it about one-twelfth its quantity of proof-spirit, that it may keep the longer from growing mothery.

IT should seem most convenient to add the spirit before the vinegar is decanted; for by this means the purification is accelerated and rendered more perfect, and the liquor prevented from growing foul a second time, which it is apt to do upon the effusion of the spirit, however

ever carefully it may have been depurated before. 'This advantage is procured by the following formula.'

Edinb.

'Take of
Dried root of squills, two ounces;
Distilled vinegar, two pounds and a half;
Rectified spirit of wine, three ounces.

'Macerate the squills with the vinegar eight days; then press out the vinegar, to which add the spirit; and when the feces have subsided, pour out the clear liquor.'

VINEGAR of squills is a medicine of great antiquity; we find in a treatise attributed to Galen, an account of its preparation, and of many particular virtues then ascribed to it. It is a very powerful stimulant, aperient, and 'what is called an' attenuant of tenacious juices; and hence is frequently used, with good success, in disorders of the breast occasioned by a load of thick viscid phlegm, for promoting urine in hydropic cases, &c. See the section of ACIDS. The dose of this medicine is from a dram to half an ounce; where crudities abound in the first passages, it may be given at first in a larger dose, to evacuate them by vomit. It is most conveniently exhibited along with cinnamon, or other agreeable aromatic waters, which prevent the nausea it would otherwise, even in small doses, be apt to occasion.

ACETUM PROPHYLACTICUM.

Prophylactic vinegar.

Paris.

Take of
Fresh tops of common wormwood,
Roman wormwood,

Fresh tops of Rosemary,

Sage,

Mint,

Rue, each one ounce
and a half;

Lavender flowers, dried, two
ounces;

Garlic,

Calamus aromaticus,

Cinnamon,

Nutmegs, each two drams;

Strong vinegar, eight pints.

Digest them, by the heat of the sun or a sand-bath, in a matrafs closely stopped, for twelve days; then strongly press out and strain the liquor, and having afterwards filtered it, add half an ounce of camphor dissolved in spirit of wine.

THIS composition is designed, as its title expresses, for an antipestiferential. It is said, that during the plague at Marseilles, four persons, by the use of this preservative, attended, unhurt, multitudes of those who were infected; that under colour of those services, they robbed both the sick and the dead; and that one of them being afterwards apprehended, saved himself from the gallows by discovering the remedy. The preparation is hence called *Vinaigre des quatre voleurs*, "The vinegar of the four thieves." It is not to be doubted, that vinegar, impregnated with antiseptic vegetables, will contribute greatly to prevent the effects of contagious air; 'but we can have recourse to more effectual and elegant formulæ than this confused *sarrago* of the four thieves.'

ACETUM THERIACALE.

Treacle vinegar.

Edinb. +

Take of
Edinburgh theriaca, described
here-

hereafter among the electaries,
one pound;

Strong vinegar, four pints.

Digest them together, in a very
gentle heat, for three days; and
then strain out the vinegar for use.

THIS medicine has been greatly
celebrated in acute and contagious
diseases, as a sudorific and alexiphar-
mac. Some have chosen to employ
the vinegar as a vehicle, rather than
as a menstruum, for the theriaca;
in either case, it is indisputably, for
sundry purposes, an useful addition.
To half an ounce by measure of the
composition here prescribed, there
goes somewhat more than half a
grain of opium; though it does not
appear, that the medicine has all
the effect which might be expected
from that article. ' This is proba-
bly owing to the property of acids
destroying the powers of opium,
lately discovered to us by the inge-

nious Dr Percival: we cannot think
that this preparation is either a safe
or elegant remedy.'

ACETUM LITHARGY- RITES.

Vinegar of litharge.

Edinb. +

Take of

Litharge, four ounces;

Strong vinegar, one pint.

Digest in a sand-heat for three days,
frequently shaking them; then
filtre the liquor for use.

THIS liquor is of the same nature
with solutions of *saccharum saturni*,
of which hereafter. It is only used
externally, as a colsmetic, against
cutaneous eruptions, redness, in-
flammations, &c. But even here, it
is not void of danger; there are ex-
amples of its continued use having
occasioned sundry ill consequences.

S E C T. IV.

W I N E S.

THE original intention of me-
dicated wines was, that me-
dicines, which were to be continued
for a length of time, might be taken
in the most familiar and agreeable
form; by this means, a course of re-
medies was complied with, notwith-
standing the repugnance and aver-
sion which the sick often manifest
to those directly furnished from the
shops; and hence the inferior sort
of people had their medicated ales.
Nevertheless, as vinous liquors ex-
cellently extract the virtues of sever-
al simples, and are not ill fitted for
keeping, they have been employed
as officinal menstrua also; and sub-
stances of the greatest efficacy are
trusted in this form. As compounds
of water and inflammable spirit, they

take up such parts of vegetables and
animals as are soluble in those li-
quors; though most of them abound
at the same time with a mucilagi-
nous or viscous substance, which
renders them less effectual menstrua
than purer mixtures of water and
spirit. They contain likewise a sub-
tile acid, which somewhat further
obstructs their action on certain ve-
getable and animal matters; but en-
ables them, in proportion to its
quantity, to dissolve some bodies of
the metallic kind, and thus impreg-
nate themselves with the corroborat-
ing virtues of steel, the alterative
and emetic powers of antimony, and
the noxious qualities of lead.

N O T E.

To all the medicated wines, after
U they

they have been strained, you may add about one-twentieth their quantity of proof-spirit, to preserve them from fermentation. They may be conveniently kept in the same kind of glass-bottles that wines generally are for common uses, which should likewise be corked with the same care [L.]

VINUM ALOETICUM ALKALINUM.

Alkaline aloetic wine.

Land.

Take of

Any fixt alkaline salt, eight ounces;

Socotorine aloes,

Saffron,

Myrrh, each one ounce;

Sal ammoniac purified, six drams;

Mountain wine, two pints.

Macerate without heat for a week or longer; then filtre the wine through paper.

THIS is the ELIXIR PROPRIETATIS HELMONTII, with some little variations, which affect the compounder rather than the composition. It is observable, that the sal ammoniac is decomposed in this process after the same manner as in the distillation of the *spiritus salis ammoniaci* (see chap. viii. sect. 2.) its acid being absorbed by, and neutralizing a part of, the fixed alkali, and its volatile alkaline salt being set at liberty; so that the result is the same as if as much pure volatile salt was added as the sal ammoniac is capable of affording, viz. near half an ounce, with about six drams of marine salt.

Helmont's elixir, in our preceding Pharmacopœia, is thus directed:

Take of

Red tartar,

Nitre, each twelve ounces;

White wine, two pints;

Aloes,

Saffron, each an ounce and a half.

Let the nitre and tartar be reduced into powder, and the mixture thrown by degrees into an hot crucible: when sufficiently calcined, pour the matter into a glass mortar, and add the wine, so as to make a ley thereof; with which ley, a tincture is to be drawn from the aloe and saffron.

Take also of

Sal ammoniac, eight ounces;

Spring water, twenty ounces;

White wine, one pint;

Myrrh, an ounce and a half.

Dissolve the sal ammoniac in the water, strain the solution, and evaporate it to dryness. One ounce of this dry salt is to be dissolved in the wine; and with this solution draw a tincture from the myrrh.

Mix both tinctures together, in a close vessel, so as to make them into an elixir.

THE preparation made after this troublesome method is not different from the foregoing. The nitre and tartar, when calcined together, form an alkaline salt similar to those which the shops are supplied with at a cheaper rate.

Helmont and others have entertained a very high opinion of this medicine, and looked upon it as "a vivifying and preserving balsam, capable of continuing health, and prolonging life to the utmost possible limits." The medicine is by some supposed to be a very efficacious and useful one for many purposes: it is thought to attenuate viscid juices, and open obstructions in the remoter parts, and promote evacuation by almost all the emunctories. In doses of one, two, or three drams, it increases the urinary secretion; and if the patient

is kept moderately warm, generally proves diaphoretic or sudorific; in larger doses, it gently loosens the belly. 'It is certainly, however, a very unscientific and uncertain preparation; and is almost wholly laid aside in modern practice.'

VINUM AMARUM.

*Bitter wine.**Lond.*

Take of

Gentian root,

Yellow rind of lemon-peel, fresh,
each one ounce;

Long pepper, two drams;

Mountain wine, two pints.

Macerate without heat, and strain out the wine for use.

THIS is a very elegant bitter, which the addition of the long pepper renders considerably warmer than the watery infusion. Gentian and lemon-peel, as we have already seen, make a bitter of a very grateful flavour: "the spice here added was selected after the trial of many other materials."

Edin.

Take of

Root of gentian, half an ounce;

Peruvian bark, one ounce;

Seville orange-peel, dried, two drams;

Canella alba (Winter's bark), one dram;

Proof spirit, four ounces;

Spanish white wine, two pounds and a half.

First pour on the spirit, and after twenty-four hours add the wine; then macerate three days, and strain.

THE virtues of this are the same with those of the preceding preparation, with this difference, that both the menstruum and the ingredients are of a much more powerful nature; this wine is intended to sup-

ply the place of the *Tinctura ad stomachicos*.

VINUM ANTIMONIALE.

*Antimonial wine.**Lond.*

Take of

Crocus of antimony, washed, one ounce;

Mountain wine, a pint and a half.

Digest without heat, and filtre the wine through paper.

VINUM EMETICUM.

*Emetic wine.**Edinb.*

Take of

Glas of antimony, finely powdered, one ounce;

Spanish white wine, fifteen ounces;

Macerate three days, stirring them now and then, and then strain the liquor through paper.'

HOWEVER carefully the settling and decantation are performed, the filtration of the wine through paper appears to be necessary, lest some of the finer parts of the glass should chance to remain suspended in substance. It is not here, as in most other wines and tinctures, where the matter left undissolved by the menstruum is of little consequence: the antimonial glass, after the action of the wine, continues as virulent as ever, and capable of impregnating fresh parcels of the liquor as strongly as the first, and this, in appearance, inexhaustibly; yet after thirty repeated infusions, it has been found scarce sensibly diminished in weight.

The antimonial wine possesses the whole virtues of that mineral, and may be so dosed and managed, as to perform all that can be effected by any antimonial preparation; with this advantage, that as the active part of the antimony is here already dissolved and rendered miscible with

the animal fluids, its operation is more certain. Given from ten to fifty or sixty drops, it acts generally as an alterative and diaphoretic; in larger doses, as a diuretic and cathartic; whilst three or four drams prove for the most part violently emetic. It has been chiefly used in this last intention, in some maniacal and apoplectic cases; and hence gained the name of emetic wine.

The quantity of the reguline part must, however, vary according to the proportions of the acid matter in different wines, and the operation of the medicine must be thereby less certain in degree; the vitrum is preferable to the crocus for making this preparation. See the different Preparations of ANTIMONY.

• **VINUM e TARTARO
ANTIMONIALI.**

Wine of antimonial tartar.

Edinb.

• Take of

Antimonial, commonly called Emetic, tartar, twenty-four grains; and dissolve it in a pound of Spanish white wine.

• **WATERY** solutions of emetic tartar, on standing, precipitate a part which is less completely in a saline state; by this means, and especially if the solution is not shaken before using it, the dose of our medicine is considerably ambiguous: in the above formula, the acid matter of the wine increases the saline state of the antimony, and therefore its solubility, whereby the operation of the medicine is more certain, and in many cases more powerful. From the certainty of its effects, this preparation might be very convenient in large hospitals or armies, where great numbers of the sick, and inaccurate nursing, frequently impose an uncertain or dangerous practice.

Each ounce of the wine contains two grains of the salt; and this dose is generally sufficient to produce full vomiting.

• **VINUM CHALYBEATUM.**

Steel wine.

Lond.

Take of

Iron filings, four ounces;
Cinnamon,
Mace, each half an ounce;
Rhenish wine, four pints.

Macerate without heat for a month, frequently shaking the vessel, and strain off the wine for use.

Edinb. +

Take of

Iron filings, three ounces;
Cochineal, half a dram;
Rhenish wine, two pints.

Digest them together for twenty days, frequently shaking the vessel, and then pass the wine through a filtre.

BOTH these wines are sufficiently elegant ones: Rhenish is an excellent menstruum for steel, and dissolves a considerable quantity of it; the cochineal, in the second, imparts a fine colour; and the spices, in the first, 'are supposed to' give the liquor an agreeable flavour, to make it fit easier on the stomach, and likewise to promote its medicinal efficacy: 'but the astringent matter of the cinnamon must undoubtedly separate a part of the iron in the form of an inky precipitate, no longer capable of being suspended in the liquor; it is, besides, reasonable to think, that the action of the astringent alters likewise the properties of the separated matter.' In the preceding edition of the Edinburgh Pharmacopœia, the digestion was ordered to be performed in a sand.

land-heat, continued for ten days. Some have objected to the use of heat, that it impregnated the wine more strongly with the metal, and thus rendered it more unpleasant to the taste; but if this was the only inconvenience, the remedy would be easy, diluting it with more wine. Heat has another effect, much less desirable, and which art cannot remedy; making a disagreeable alteration in the quality of the wine itself.

Steel wine is a very useful preparation of this metal, and frequently exhibited in chlorotic and other indispositions where chalybeates are proper. Boerhaave recommends it as one of the noblest medicines he was acquainted with, for promoting that power in the body by which blood is made, when weakened by a bare debility of the over-relaxed solids, and an indolent, cold, aqueous indisposition of the juices: for in this case, says he, no virtue of any vegetable or animal substance, no diet, nor regimen, can effect that which is effected by iron: but it proves hurtful where the vital powers are already too strong, whether this proceeds from the fluids or the solids. The dose is from a dram to half an ounce; which may be repeated two or three times a-day.

Some direct solutions of iron, made in wine or other vegetable acids, to be evaporated to the consistence of an extract, under the title of *EXTRACTUM MARTIS*. These preparations have no advantage, in point of virtue, above the common chalybeates; though in some form, that of pills in particular, they may be rather more commodiously exhibited than most of the officinal chalybeates of equal efficacy. They may be made into pills by themselves, and are tenacious enough to reduce other substances into that form.

VINUM CROCEUM.

*Saffron wine.**Lond.*

Take of

Saffron, one ounce;

Canary, one pint.

Macerate without heat, and strain off the wine.

CANARY has been objected to by some, as an improper menstruum for medicinal simples, since it contains a large quantity of unctuous matter, which impedes its dissolving power; a pint of this sort of wine left, upon evaporation, two ounces of a mellaginous substance, not unlike honey boiled hard. It is nevertheless, for saffron, a very well adapted menstruum; as not only sufficiently loading itself with its virtues, but likewise coinciding in the general intention of the medicine, that of a cordial. The preparation made with Canary is also better fitted for keeping, than when wines that have any tendency to acidity are employed; for tinctures of saffron drawn with these last, soon lose their fine colour; whilst those made with the first, retain it for a much longer time. The dose of this tincture is from one dram to three or more.

VINUM IPECACUANHÆ.

*Wine of ipecacuanha.**Lond.*

Take of

Ipecacuanha, two ounces;

Yellow rind of Seville orange-peel, dried, half an ounce;

Canary, two pints.

Macerate without heat, and strain out the wine.

TINCTURA IPECACUANHÆ.

*Tincture of ipecacuanha.**Edinb.*

Take of

Ipecacuanha, in powder, one ounce;

U 3

Spanish

Spanish white wine, fifteen ounces;

After three days maceration, let the tincture be filtrated for use.

BOTH these wines are very mild and safe emetics, and equally serviceable, in dysenteries also, with the ipecacuanha in substance; this root yielding nearly all its virtues both to the Spanish white wine, and Canary here ordered, as it does a good share of them even to aqueous liquors. The common dose is an ounce, more or less, according to the age and strength of the patient. The college of Edinburgh added formerly a scruple of cochineal, which imparts a fine red colour to the liquor; this article is now omitted, on a complaint, that the red colour of the matters evacuated, sometimes alarmed the patient, as if it proceeded from a discharge of blood.

VINUM VIPERINUM.

*Viper wine.
Lond.*

Take of

Dry vipers, two ounces;

Mountain, three pints.

Macerate with a gentle heat for a week, and then strain off the wine.

It has been disputed, whether live or dry vipers are preferable for making this medicine: such as are moderately and newly dried, are perhaps the most eligible, since by exsiccation they seem to lose only their phlegmatic or aqueous parts. Whether they communicate to the wine, either when used fresh or dry, so much virtue as they are supposed to do, is greatly to be doubted. Some compositions under this name have been highly celebrated, as restoratives, in debilities and decays of constitution; but what virtues of this

kind they possessed, were supplied chiefly from other ingredients.

VINUM MILLEPEDARUM.

*Wine of millepedes.
Edinb.*

Take of

Live millepedes, bruised, one ounce;

Rhenish wine, eight ounces.

Infuse them together for seven days, and afterwards press the liquor through a strainer.

THIS wine has been commended as an admirable cleanser of all the viscera, yielding to nothing in the jaundice, and obstructions of the kidneys or urinary passages, of excellent service in almost all chronical distempers, even in scrophulous and stumous swellings, and in defluxions of rheum upon the eyes. But those who expected these extraordinary virtues from it, have often been deceived; and at present there are few who have any great dependence on it. It is directed to be given from half an ounce to two ounces.

TINCTURA CEPHALICA.

*Cephalic tincture.
Edinb. +*

Take of

Wild valerian root, four ounces;

Virginian snakeroot, one ounce;

Rosemary tops, half an ounce;

French white wine, six pints.

Digest them together for three days, and then filtre the tincture.

THIS preparation promises to be a medicine of considerable utility as a cephalic, that is, in disorders of the nervous system; as in vertiginous, epileptic, and paralytic complaints. The composition is improved from former editions, by the rejection of some ingredients, of which the best were superfluous; viz. casumunar,

fumunar, white dittany roots, peony roots, mistletoe of the oak, and peacocks dung. Cafumunar is doubtless an article of importance; but much inferior, in the present intention, to the ingredients now retained.

Here it may be proper to observe, that though some of the distilled waters, to be treated of hereafter, receive many supernumerary ingredients, without any considerable injury to the produce, yet in medicines prepared by infusion it is far otherwise. For these ingredients, which give nothing over, do little harm: but as all those commonly employed in infusions communicate something to the menstruum; so, if superfluous ones are admitted, they load the liquor with an useless matter, and occupy in it the place that ought to be possessed by the more efficacious.

TINCTURA CEPHALICA PURGANS.

Purging cephalic tincture.

Edinb. +

This is made by adding to the foregoing, of

Senna, two ounces;

Black hellebore roots, one ounce;

French white wine, two pints.

PURGATIVES are often very necessary additions to medicines of the foregoing class. Those here made choice of are well adapted to the purpose, and in such quantity as to make the wine gently laxative in doses of two ounces.

TINCTURA RHABARBARI VINOSA.

Vinous tincture of rhubarb.

Lond.

Take of

Rhubarb, two ounces;

Lesser cardamom seeds, freed from the husks, half an ounce;

Saffron, two drams;
Mountain wine, two pints;
Macerate without heat, and then strain off the tincture.

VINUM RHEI.

Rhubarb wine.

Edinb.

Take of

Rhubarb, two ounces;

Canella alba, one dram;

Proof-spirit, two ounces;

Spanish white wine, fifteen ounces.

Macerate seven days, and strain.

By assisting the solvent power of the menstruum, the proof-spirit, in the above formula is a very useful addition. This is a warm, cordial, laxative medicine. It is used chiefly in weakness of the stomach and bowels, and some kinds of loosenesses, for evacuating the offending matter, and strengthening the tone of the viscera. It may be given from half a spoonful to three or four spoonfuls or more, according to the circumstances of the disorder, and the purposes it is intended to answer.

TINCTURA SACRA.

Lond.

Take of

Socotorine aloes, eight ounces;

Canella alba, two ounces;

Mountain wine, ten pints.

Reduce the aloes and canella separately into powder; then mix, and pour on them the wine; afterwards macerate without heat, for a week or longer, occasionally shaking the vessel; lastly, strain off the wine.

It will be convenient to mix with the powders some white sand, well washed from dirt, to prevent the aloes from concreting, which it is apt to do upon being moistened.

Edinb.

- Take of
 Socotorine aloes, one ounce;
 Lesser cardamom seeds,
 Ginger, of each one dram;
 Spanish white wine, two pounds.
 Digest seven days, stirring now and then, and strain.

THIS medicine has long been in great esteem, not only as a cathartic, but likewise as a stimulus; the wine dissolving all that part of the aloes in which these qualities reside, a portion only of the less active resinous matter being left. The aromatic ingredients are added to warm the medicine, and somewhat alleviate the ill flavour of the aloes: *cannella alba*, or cloves, are said, among numerous materials that have been made trial of, to answer this end the most successfully.

The *tinctura sacra* appears from long experience to be a medicine of excellent service in languid, phlegmatic habits, not only for cleansing the *primæ viæ*, but likewise for stimulating the solids, warming the habit, promoting or exciting the uterine purgations, and the hæmorrhoidal flux. The dose, as a purgative, is from one to two ounces, or more. It may be introduced into the habit, so as to be productive of excellent effects, as an alterant, by giving it in small doses, at proper intervals: thus managed, it does not for a considerable time operate remarkably by stool; but at length proves purgative, and occasions a lax habit of much longer continuance than that produced by the other common cathartics.

TINCTURA THEBAICA.

Thebaic tincture.

Lond.

- Take of
 Strained opium, two ounces;
 Cinnamon,

Cloves, each one dram;

Mountain wine, one pint.

Macerate without heat for a week, and then filter the tincture through paper.

THIS is the LIQUID LAUDANUM of SYDENHAM, with the exchange of Canary wine for mountain, and the omission of an ounce of saffron. The aromatics in the form above are in so small quantity, that the prescriber can scarce expect any considerable effect from them, the proportion of each that goes to a grain of opium, amounting to no more than the sixteenth part of a grain: even these minute proportions, however, are in good measure sufficient to take off the ill odour of the opium, which seems to be all that is intended by them.

The principal advantages of exhibiting opium in this form are, that by being already dissolved, it exerts itself the sooner in the body; and that by some persons, liquids are more commodiously taken than a bolus or pill. The common doses of the tincture are, from ten drops to forty, fifty, or more, according to the exigencies of the case. It were to be wished, that the dose could be more exactly ascertained, by weight or measure; as the drops may, according to different circumstances, vary in quantity, though in number the same; and as an error therein may, in some cases, be of mischievous consequence. Twenty drops contain, at a medium, about one grain of opium; or rather, so much as that quantity of wine will extract from one grain; for the liquor does not dissolve the whole substance of the opium, nor is the solution equivalent, in its effect, to the full quantity of opium employed in it.

A liquid opiate, free from the inconveniences here complained of, will

will be described under the head of
SPIRITUOUS TINCTURES.

VINUM AROMATICUM.

Aromatic wine.

Take of

Cloves,
Ginger, each half an ounce;
Cinnamon,
Nutmegs, each one ounce;
Canary wine, six pints.

Beat the spices into a coarse powder,
and steep them in the wine for
some days; then pass the liquor
through a strainer.

THIS wine is a very high cordial,
and greatly commended for warm-
ing the habit and strengthening the
nervous system. It is so hot of the
spices as to require being diluted for
use, and to be taken only in small
quantities at a time. Mixed with
a little lemon juice, and a large pro-
portion of milk, it forms a pleasant
and useful whey in low fevers.

VINUM FEBRIFUGUM.

Febrifuge wine.

Paris.

Take of

Peruvian bark, in powder, two
ounces;

Rough red wine, two pints.

Digest them together in a circula-
tory vessel, with a moderate heat,
for forty-eight hours, occasionally
shaking the vessel: then suffer the
whole to cool, and pass the wine
through a strainer.

THIS is the preparation of bark
made use of by Sir Robert Tabor or
Talbot (an English gentleman resi-
ding in France) who was one of the
first that retrieved the character of
the medicine itself, at the time that
some ill consequences following its
imprudent use had brought it into
disesteem. He kept this prepara-
tion a secret, till Lewis XIV. pur-
chased it for a considerable sum,

and communicated it to the public.
It was not however the preparation,
but a proper method of managing
the medicine, upon which the suc-
cess of his practice depended. See
p. 203, 204 It appears from expe-
rience, that this wine is less certain
in the cure of agues than the bark
given in substance; nor is it equal,
in this intention, for general use, to
the watery infusion described in
page 280; the wine preventing its
being taken so freely as is in many
cases requisite. It nevertheless has
its uses in those intermittent fevers
where a large quantity of the bark
is not necessary; and is particularly
serviceable in a laxity and debility
of the stomach and intestines.

VINUM GUAIA CINUM.

Guaiacum wine.

Take of

Guaiacum wood,
Yellow Saunders, each two ounces;
Orange-peel, dried,
Lesser cardamom seeds, each one
ounce;
Mountain wine, one gallon.

Let them steep together for a week,
and then strain out the wine for
use.

THIS is a moderately warm and
corroborating wine. It is used in
nervous weaknesses, in decays of
constitution from cold pituitous hu-
mours; and proves an useful preser-
vative against rheumatic and arthri-
tic complaints. Two ounces, or an
ordinary wine glass, may be taken
two or three times a day, and con-
tinued for a month or two.

**VINUM GUAIA CINUM cum
HELLEBORO.**

Guaiacum wine with hellebore.

Take of

Guaiacum wood,
Black hellebore root, each two
ounces;

Lesser

Lesser cardamom seeds,
Orange-peel, dried, each one
ounce;

Mountain wine, four pints.

Let these ingredients steep together
for a week or longer, and then
strain out the wine for use.

FROM the warm stimulating, de-

obstruent qualities of this wine, it
may be used to good advantage in
cold phlegmatic habits, where there
is a disposition to gouty, rheuma-
tic, or hydropic disorders. It is to
be taken chiefly over night, in such
small doses as not to run off by
stool.

S E C T. V.

A L E S.

MEDICATED ales are intended
as diet drinks in chronical
indispositions. There are two ways
of impregnating malt-liquors with
the virtues of medicinal substances;
macerating the subject in the liquor
after the fermentation is completely
finished; and fermenting it along
with the liquor, or at least adding
it towards the end of the fermenta-
tion, that, by the resolute power
of that process, its texture may be
opened, and its medicinal parts more
fully extracted. Neumann observes,
that the active powers of many ve-
getables are not only effectually ex-
tracted, but extended, as it were, by
fermentation: that so much pound-
ed nutmeg, as will lie on the point
of a knife, gives a flavour to a large
vat of fermenting ale; whereas,
when the fermentation is finished,
the quantity of liquor to which it
gives a like impregnation is com-
paratively inconsiderable.

CEREVISIA AMARA.

Bitter ale.

Take of

Gentian root,
Lemon-peel, fresh, each four
ounces;
Long-pepper, ounce;
Ale, one gallon.

Let them steep together without
heat.

THIS is an agreeable bitter sto-
machic ale, much superior to the
common purls, or any of the compo-
sitions of this kind to be met with in
the extemporaneous recipe writers.

CEREVISIA APERIENS.

Aperient ale.

Take of

Mustard-seed, unbruised, ten
ounces;
Long birthwort root, six ounces;
Lesser centaury tops, two ounces;
Savin tops, one ounce;
New small-ale, ten gallons.

THIS is an useful aperient diet-
drink in cachectic and chlorotic in-
dispositions, and in all cases where
obstructions begin to form in the
viscera. It is to be taken, to the
quantity of half a pint at a time,
twice a-day.

CEREVISIA BUTLERI.

Dr Butler's ale.

Take of

Betony,
Sage,
Agrimony,
Garden scurvy-grass,
Roman wormwood, each three
handfuls;
Elecampane roots,
Horse-radish roots, each four
ounces;

New

New ale, four gallons.
The herbs and roots are to be put in a bag, and hung in the ale while it works.

This liquor has so far obtained among the common people, as to have been frequently made and sold in public houses. It is used in the spring for purifying the blood, and preventing scorbutic disorders.

CEREVISIA CEPHALICA.

Cephalic ale.

Take of

Wild valerian-root, ten ounces ;
Mustard-seed, whole, six ounces ;
Virginian snake-root, two ounces ;
Rosemary, or sage, three ounces ;
New small-ale, ten gallons.

THE ingredients of this composition are all of the warm and stimulating kind ; and consequently tend to invigorate the nervous system, and promote the circulation of the fluids. In palsies, epilepsies, and vertigoes, some benefit may be expected from this liquor used as common drink.

CEREVISIA DIURETICA.

Diuretic ale.

Take of

1.

Mustard-seed, whole,
Juniper-berries, each eight ounces ;
Wild-carrot seeds, three ounces ;
Common wormwood, two ounces ;
New small-ale, ten gallons.

Take of

2.

Broom-tops,
Mustard-seed, each sixteen ounces ;
Flower-de-luce roots,
Sharp-pointed dock roots, each twelve ounces ;

Winter's bark,
Elder bark,
Wild-carrot seeds,
Juniper-berries, each two pounds ;
New ale, twelve gallons.

In hydropic cases, and corpulent scorbutic habits, these aperient and diuretic liquors are very useful diet-drinks. Half a pint of either may be taken two or three times a day.

CEREVISIA AD SCORBUTICOS.

Scorbutic ale.

Take of

Horse-radish root, fresh, one pound ;
Sharp-pointed dock roots, half a pound ;
Canella alba, two ounces ;
Buck-bean leaves, fresh, eight ounces ; or dried, three ounces ;
New small-ale, ten gallons.

IN scorbutic disorders, and impurities of the blood and juices, this liquor, used as common drink, generally does good service. All the ingredients are very effectual for the intention, and well-suited to the form. If the sharp-pointed dock roots were exchanged for those of the great water dock, the composition would be still more powerful.

'We are, however, disposed to consider the whole of the above preparations as remedies of very uncertain effect ; and in diseases of consequence, they ought certainly never to take the room of more active medicines. When taken in their fermenting state, the fixed air may probably have some effects as a tonic and antiseptic ; and this is the more probable, since wort is found to be such an effectual remedy in scurvy.'

S E C T. VI.

SPIRITUOUS TINCTURES.

RECTIFIED spirit of wine is the direct menstruum of the resins and essential oils of vegetables, and totally extracts these active principles from sundry vegetable matters, which yield them to water either not at all, or only in part. It dissolves likewise the sweet saccharine matter of vegetables; and, generally, those parts of animal bodies, in which their peculiar smell and taste reside.

The virtues of many vegetables are extracted almost equally by water and rectified spirit; but in the watery and spirituous tinctures of them there is this difference; that the active parts in the watery extractions, are blended with a large proportion of inert gummy matter, on which their solubility in this menstruum in great measure depends, while rectified spirit extracts them almost pure from gum. Hence, when the spirituous tinctures are mixed with watery liquors, a part of what the spirit had taken up from the subject generally separates and subsides, on account of its having been freed from that matter which, being blended with it in the original vegetable, made it soluble in water. This, however, is not universal; for the active parts of some vegetables, when extracted by rectified spirit, are not precipitated by water, being almost equally dissoluble in both menstrua.

Rectified spirit may be tinged by vegetables of all colours, except blue: the leaves of plants in general, which give out but little of their natural colour to watery liquors, communicate to spirit the whole of their green tincture, which for the most part proves elegant, though not very durable.

Fixed alkaline salts deepen the colour of spirituous tinctures; and hence have been supposed to promote the dissolving power of the menstruum, though this does not appear from experience: in the trials that have been made to determine this affair, no more was found to be taken up in the deep-coloured tinctures than in the paler ones, and often not so much: if the alkali be added after the extraction of the tincture, it will heighten the colour as much as when mixed with the ingredients at first. Nor is the addition of these salts in making tinctures, useless only, but likewise prejudicial, as they in general injure the flavour of aromatics, and superadd a quality, sometimes contrary to the intention of the medicine. Volatile alkaline salts, in many cases, promote the action of the spirits. Acids generally weaken it; unless when the acid has been previously combined with the vinous spirit into a compound of new qualities, called *dulcified spirit*.

General Rules for extracting Tinctures; from the Edinburgh Pharmacopœia. +

I.

THE vegetable-substances ought to be moderately and newly dried,

unless they are expressly ordered otherwise. They should likewise be cut and bruised, before the

the menstrum is poured on them.

II.

If the digestion is performed in balneo, the whole success depends upon a proper management of the fire: it ought to be all along gentle, unless the hard texture of the subject should require it to be augmented: in which case the heat may be increased so as to make the menstruum boil a little towards the end of the process.

III.

Very large circulatory vessels ought to be employed for this purpose, which should be heated before they are luted together.

Circulatory vessels are those which are so contrived, and of such a height, that the vapour, which arises during the digestion, may be cooled and condensed in the upper part, and fall down again into the liquor below: by this means the dissipation, both of the spirit and of the volatile parts of the ingredients, is prevented. They are generally composed of two long-necked matrasles or boltheads; the mouth of one of which is to be inserted into that of the other, and the juncture secured by a piece of wet bladder. The use of heating the vessels is, to expel a part of the air; which otherwise rarifying in the process, would endanger bursting them, or blowing off the uppermost matras. A single matras with a long neck, or with a glass-pipe inserted into its mouth, is more commodious than the double vessel. See PHARMACEUTICAL APPARATUS.

IV.

The vessel is to be frequently shaken during the digestion.

V.

All tinctures should be suffered to settle before they are committed either to the filtre or strainer.

VI.

In the tinctures (and distilled spirits likewise) designed for internal use, no other spirit (drawn from malt, melasses, or other fermented matter) is to be used, than that expressly prescribed.

VII.

Resins and resinous gums yield tinctures more successfully, if, after being ground into powder, they be mixed with some white sand, well washed and dried, which will prevent their running into lumps by the heat. If the powders prescribed are sufficient for this purpose, such an addition is unnecessary.

TINCTURA AMARA

Bitter tincture.

Lond.

Take of

Gentian-root, two ounces;

Yellow rind of Seville orange-peel, dried, one ounce;

Lesser Cardamom-seeds, freed from the husks, half an ounce;

Proof-spirit, two pints.

Digest without heat, and strain off the tincture.

‘ TINCTURA AMARA, five ELIXIR STOMACHICUM.

Bitter tincture, or stomachic elixir.

Edinb.

‘ Take of

Gentian-root, two ounces;

Seville orange-peel, dried, one ounce;

Canella alba, half an ounce;

Cochineal, half a dram.

Proof-spirit, two pounds and a half.

‘Macerate four days, and strain thro’ paper.’

THESE are very elegant spirituous bitters. As the preparations are designed for keeping, lemon-peel,

peel, an excellent ingredient in the watery bitter infusions, has, on account of the perishableness of its flavour, no place in these. The aromatics are here a very commodious ingredient, as in this spirituous menstruum they are free from the inconvenience which they are attended with in other liquors, of rendering them untransparent.

TINCTURA AROMATICA.

Aromatic tincture.

Lond.

Take of

Cinnamon, six drams;
Lesser cardamom-seeds, freed
from the husks, three drams;
Long-pepper,
Ginger, each two drams;
Proof-spirit, two pints.

Digest without heat, and then strain off the tincture.

THIS is a very warm aromatic, too much so to be given without dilution. A tea-spoonful or two may be taken in wine, or any other convenient vehicle, in languors, weakness of the stomach, flatulencies, and other like complaints. The stomachic tincture described 'formerly,' is similar in intention to this, but contrived less hot of the spices, that it may be taken by itself.

Edinb.

'Take of

Cinnamon, six drams;
Lesser cardamom-seeds, one ounce;
Garden-angelica root, three drams;
Long-pepper, two drams;
Proof-spirit, two pounds and a half.
'Macerate for seven days, and filtre the tincture.'

THIS preparation is improved from the preceding editions by the

omission of some articles, either superfluous or foreign to the intention; galangal, gentian, zedoary, bay-berries, and 'calamus aromaticus.' As now reformed, it is a sufficiently elegant warm aromatic.

TINCTURA BALSAMICA.

Balsamic tincture.

Edinb. +

Take of

Balsam of Copaiba, one ounce and a half;

Balsam of Peru, half an ounce;
English saffron, one dram;

Rectified spirit of wine, one pint.

Digest these ingredients together, in a sand-heat, for three days; and then pass the tincture through a strainer.

THIS tincture is usually given in doses of ten, twenty, or thirty drops, in the fluor albus, gleet, cachexies, some kinds of asthma, and nephritic complaints, for strengthening the tone of the viscera, and corroborating the nervous system in general. Some caution is requisite in the use of these resinous warm medicines: in cold, languid, phlegmatic habits, they have, for the most part, good effects; but in bilious and plethoric constitutions, where there is any tendency to inflammation, or immoderate heat, they are manifestly prejudicial, and raise or continue febrile symptoms.

TINCTURA CANTHARIDUM.

Tincture of cantharides.

Lond.

Take of

Cantharides, bruised, two drams;
Cochineal, half a dram;

Proof-spirit, a pint and a half.

Digest them together, and afterwards filtre the tincture through paper.

Edinb.

Edinb.

- Take of
 Cantharides, one dram;
 Proof-spirit, one pound;
 Digest four days, and strain thro' paper.

THESE tinctures possess the whole virtues of the fly, and are the only preparations of it designed for internal use; tinctures being by far the most commodious and safe form for the exhibition of this active drug. The two tinctures are scarcely different in virtue from one another. The cochineal is used only as a colouring ingredient: the gum guaiacum, camphor, and essential oil of juniper-berries, which were formerly added, however well adapted to the intentions of cure, can be of little consequence in a medicine limited to so small a dose. If any additional substances should be thought requisite for promoting the effect of the cantharides, whether as a diuretic, as a detergent in ulcerations of the urinary passages, or as a specific restraining of seminal gleets and the fluor albus, they are more advantageously joined extemporaneously to the tincture, or interposed by themselves at proper intervals. The usual dose of these tinctures, is from ten to twenty drops; which may be taken in a glass of water, or any other more agreeable liquor, twice a-day; and increased by two or three drops at a time, according to the effect.

TINCTURA CARDAMOMI.

Tincture of cardamoms.
 Lond.

- Take of
 Lesser cardamom-seeds, hulked,
 half a pound;
 Proof-spirit, two pints.
 Digest without heat, and strain the tincture.

Edinb.

- Take of
 Lesser cardamom seeds, six ounces;
 Proof-spirit, two pounds and a half.
 Macerate eight days, and strain through paper.

TINCTURE of cardamoms has been in use for a considerable time. It is a pleasant, warm cordial; and may be taken, along with any proper vehicle, from a dram to a spoonful or two.

TINCTURA CASTOREI.

Tincture of castor.
 Lond.

- Take of
 Russia castor, powdered, two ounces;
 Proof spirit, two pints.
 Digest for ten days without heat, and strain off the tincture.

Edinb.

- Take of
 Russia castor, an ounce and a half;
 Rectified spirit of wine, one pound.
 Digest them with a gentle heat for six days, and afterwards strain off the liquor.

An alkaline salt was formerly added in this last prescription, which is here judiciously rejected, as being at least an useless, if not prejudicial ingredient. It has been disputed, whether a weak or rectified spirit, and cold or warm digestion, are preferable for making this tincture. To determine this point, the following experiment has been brought.
 "Some fine Siberia castor having
 "been infused in good French
 "brandy, without heat, for twenty
 "days, the tincture proved very
 "weak:

“ weak : On the same individual
 “ castor (the magma or residuum
 “ of the former tincture) the same
 “ quantity of rectified spirit was
 “ poured, as before of brandy ; and
 “ after a few hours warm digestion,
 “ a tincture was extracted much
 “ stronger than the other.” But
 this experiment is not satisfactory ;
 the effects of the two menstrua, and
 of heat, having been respectively
 compared in very different circum-
 stances.

From the trials which I have
 made it appears, that castor, ma-
 cerated without heat, gives out its
 finer and most grateful parts to
 either spirit, most perfectly to the
 rectified. That heat enables both
 menstrua to extract greatest part of
 its grosser and more nauseous mat-
 ter ; and that proof spirit extracts
 this last more readily than rectified.

The tincture of castor is recom-
 mended in most kinds of nervous
 complaints and hysteric disorders :
 In the latter it sometimes does ser-
 vice, though many have complained
 of its proving ineffectual. The dose
 is from twenty drops to forty, fifty,
 or more.

TINCTURA CASTOREI COMPOSITA.

Compound tincture of castor.
Edinb.

Take of

Russia castor, one ounce ;

Asafetida, half an ounce ;

Vinous spirit of sal ammoniac,
 one pound.

Digest for six days in a close-stop-
 ped phial, frequently shaking the
 vessel ; and then strain the tinc-
 ture.

THIS composition is a medicine
 of real efficacy, particularly in hy-
 steric disorders, and the several
 symptoms which accompany them.
 The spirit here used, is the second

of those hereafter described under
 that title : it is an excellent men-
 struum both for the castor and the
 asafetida, and greatly adds to their
 virtues.

TINCTURA CINNAMOMI.

Tincture of cinnamon.

Lond.

Take of

Cinnamon, an ounce and a half ;
 Proof-spirit, a pint.

Digest without heat, and strain off
 the tincture.

Edinb.

Take of

Cinnamon, three ounces ;
 Proof spirit, two pounds and a
 half.

‘ Macerate eight days, and strain.’

THE tincture of cinnamon pos-
 sesses the restringent virtues of the
 cinnamon, as well as its aromatic
 cordial ones ; and in this respect
 it differs from the distilled waters
 of the spice.

TINCTURA CORTICIS PERUVIANI SIMPLEX.

Simple tincture of Peruvian bark.
 Lond.

Take of

Peruvian bark, four ounces ;
 Proof-spirit, two pints.

Digest and strain.

Edinb.

Take of

Peruvian bark, four ounces ;
 Proof-spirit, two pounds and a
 half.

‘ Digest ten days, and strain.’

A medicine of this kind has been
 for a long time pretty much in
 esteem, and usually kept in the
 shops, though but lately received
 into the dispensatory. Some have
 employed highly-rectified spirit of
 wine

wine as a menstruum ; which they have taken care fully to saturate, by digestion on a large quantity of the bark. Others have thought to assist the action of the spirit by the addition of a little fixed alkaline salt, which does not, however, appear to be of any advantage ; and others have given the preference to the vitriolic acid, which was supposed, by giving a greater consistence to the spirit, to enable it to sustain more than it would be capable of doing by itself ; at the same time that the acid improves the medicine by increasing the roughness of the bark. This last tincture, and that made with rectified spirit, have their advantages ; though for general use, that above directed is the most convenient of any, the proof-spirit extracting nearly all the virtues of the bark. It may be given from a tea-spoonful to half an ounce or an ounce, according to the different purposes it is intended to answer. See PERUVIANUS CORTEX.

TINCTURA CORTICIS PERUVIANI VOLATILIS.

*Volatile tincture of Peruvian bark.
Lond.*

Take of

Peruvian bark, four ounces ;
Spirit of sal ammoniac, two pints.

Digest without heat, in a vessel close stopped, and afterwards strain the tincture.

THIS tincture is but lightly impregnated with the virtues of the bark ; and is so acrimonious, that the largest dose, which can with safety be given of it, can contain only a very small quantity of the subject. The medicine nevertheless has its uses, and may be serviceable in some cases where the stronger are improper, as in difficulty of breathing, obstructions and oppres-

sions of the breast. Stronger tinctures of this kind may be obtained by means of dulcified spirit of sal ammoniac, or the spirit prepared with quicklime. All the three may be employed, where a large quantity of bark is not required, as at the close of the cure of intermittents, in weakness of digestion, attended with a cold sensation at the stomach, and some fluxes, particularly those from the uterus, where the circulation is languid, the fibres relaxed, and where there is a periodical return of slight feverish complaints. In these cases I have often experienced salutary effects from a tincture in dulcified spirit of sal ammoniac, given to the quantity of a tea-spoonful five or six times a-day, in any appropriated vehicles.

TINCTURA CORTICIS PERUVIANI COMP.

*Compound tincture of Peruvian bark.
Edinb. +*

Take of

Peruvian bark, in powder, three ounces ;
Virginian snakeroot,
Gentian, each two drams ;
French brandy, two pints.

Let them steep together for three days, and afterwards filtre the tincture.

THE substances here joined to the bark, in some cases, promote its efficacy in the cure of intermittents, and not unfrequently are absolutely necessary. In some ill habits, particularly where the viscera and abdominal glands are obstructed, the bark, by itself, proves unsuccessful, if not injurious ; whilst given in conjunction with 'stimulating' stomachics and deobstruents, it more rarely fails of the due effect. Gentian and Virginian snakeroot are among the best additions for this purpose ; to which it is 'thought by
X some'

some' necessary to join chalybeate medicines also.

TINCTURA CROCI.

Tincture of saffron.

Edinb.

- Take of
English saffron, one ounce;
Proof-spirit, fifteen ounces;
After digessing them for five days,
let the tincture be strained thro'
paper.'

THIS tincture is similar in virtue to the saffron wine. A spirituous menstruum is here preferred to the wine, as a tincture drawn with the former retains its elegant colour longer, and is not apt to deposite in keeping any part of what it had taken up from the saffron. The shops have been accustomed to employ treacle-water as a menstruum for saffron, with a view to the promoting its efficacy in the intention of an alexipharmac; but the acid in that compound water soon destroys the colour of the tincture.

TINCTURA FÆTIDA.

Fetid tincture.

Lond.

- Take of
Asafetida, four ounces;
Rectified spirit of wine, two pints.
Digest, and strain.

Edinb.

- Take of
Asafetida, two ounces;
Vinous spirit of sal ammoniac,
one pound.
• Macerate six days in a close-shut
vessel, and strain.

• In the above formula, the vinous spirit of sal ammoniac is not only a more powerful menstruum than the rectified spirit of wine, but

also coincides with the general virtues of the remedy.'

This tincture possesses the virtues of the asafetida itself; and may be given from ten drops to fifty or sixty. It was first proposed to be made with proof-spirit: this dissolves more of the asafetida than a rectified one, but the tincture proves turbid; and therefore rectified spirit, which extracts a transparent one, is very justly preferred.

TINCTURA FULIGINIS.

Tincture of soot.

Lond.

- Take of
Wood-foot, two ounces;
Asafetida, one ounce;
Proof-spirit, two pints.
Digest, and strain.

Edinb.

- Take of
Shining wood-foot, one ounce;
Asafetida, half an ounce;
Rectified spirit of wine,
Proof-spirit, of each half a pound.
Digest for six days, and strain.'

THE proof-spirit is not liable to the same objection here as in the foregoing tincture; for when soot is added, whatever spirit be employed, the tincture will not prove transparent. Fuller, in his *Pharmacopœia Domestica*, has a medicine under the title of *Hysteric tincture*, similar to these, only with a little myrrh, which is no very material addition to asafetida and soot. These medicines are found serviceable, not only in hysteric cases, but likewise in other nervous disorders. They may be given from a teaspoonful to a common spoonful twice a-day.

• This medicine has by some been thought serviceable in obstructions of the menses.'

TINC.

**TINCTURA GUAIAICINA
VOLATILIS.**

Volatile tincture of guaiacum.
 Lond.

Take of

Gum guaiacum, four ounces ;
Volatile aromatic spirit, a pint
and a half.

Digest without heat in a vessel close
stopped ; and afterwards let the
tincture be passed through a
strainer.

**ELIXIR GUAIAICINUM
VOLATILE.**

Volatile elixir of guaiac.
 Edinb.

Take of

Gum guaiacum, four ounces ;
Balsam of Peru, two drams ;
Distilled oil of sassafras, half a
dram ;
Vinous spirit of sal ammoniac, a
pound and a half.

Macerate six days in a close vessel,
and strain.

‘ In the above formula, the vi-
nous spirit of sal ammoniac is less
acrimonious than the menstruum di-
rected by the London College ; and
the balsam of Peru, and distilled oil
of sassafras, are useful additions by
increasing the permanence of its o-
peration as a general stimulant, or
more particularly as a diuretic.’

THESE are very elegant and effi-
cacious tinctures ; the volatile spi-
rit excellently dissolving the gum,
and at the same time promoting its
medicinal virtue. In rheumatic ca-
ses, a tea ‘ or even table’ spoonful,
taken every morning and evening
in any convenient vehicle, has pro-
ved of singular service.

TINCTURA JALAPII.

Tincture of jalap.
 Lond.

Take of

Jalap-root, eight ounces ;

2

Proof-spirit, two pints.
After proper digestion, strain off
the tincture.

THIS tincture is an useful and
mild purgative, the menstruum,
here employed, taking up so much
of the gummy parts, as corrects the
gripping quality which the resin is
attended with. It may be taken by
itself from a dram to half an ounce ;
or mixed in smaller quantity with
cathartic infusions, or the like.

TINCTURA JALAPPÆ.

Tincture of jalap.
 Edinb.

Take of

Jalap, in coarse powder, three
ounces ;
Proof-spirit, fifteen ounces.
Digest them for eight days, and
strain the tincture.

RECTIFIED spirit of wine was
formerly ordered for the prepara-
tion of this tincture ; but rectified
spirit dissolving little more than the
pure resinous parts of the jalap,
rendered the use of the medicine
somewhat less commodious than that
of the tincture prepared with proof-
spirit. Most of the tinctures made
in rectified spirit, diluted with wa-
ter, so as to be fit for taking, form
a turbid white mixture. Many of
them are safely taken in this form,
without any further addition : but
the cathartic ones are never to be
ventured on without an admixture
of syrup or mucilage to keep the
resin united with the liquor ; for if
it separates in its pure undivided
state, it never fails to produce vio-
lent gripes.

Some have preferred to the tinc-
tures of jalap, a solution in spirit of
wine of a known quantity of the
resin extracted from the root ; and
observe, that this solution is more
certain in strength than any tinc-
ture

X 2

ture that can be drawn from the root directly. For, as the purgative virtue of jalap resides in its resin, and as all jalap appears from experiment not to be equally resinous, some sorts yielding five, and others not three ounces of resin from sixteen; it follows, that although the root be always taken in the same proportion to the menstruum, and the menstruum always exactly of the same strength, it may nevertheless, according to the degree of goodness of the jalap, be impregnated with different quantities of resin, and consequently prove different in degree of efficacy. Though this objection against the tincture does not reach so far as some seem to suppose, it certainly behoves the apothecary to be careful in the choice of the root. The inferior sorts may be employed for making *resina jalappa*, which they yield in as great perfection, though not in so large quantity, as the best. Newmann thinks even the worm-eaten jalap as good for that purpose as any other.

TIKTURA JALAPPÆ COMPOSITA.

Compound tincture of jalap.

Edinb. +

Take of

- Jalap, six drams;
- Black - hellebore roots, three drams;
- Juniper-berries,
- Guaiacum shavings, each half an ounce;
- French brandy, a pint and a half.

Digest for three days, and afterwards strain the tincture.

THIS tincture requires to be taken in larger quantity than either of the foregoing, if intended to act fully as a cathartic. It may, in some cases, be employed to advance

in small doses, as an alterant. The quantity of the purgative materials, that goes to an ounce of the tincture, is fifteen grains of jalap, and seven and a half of the black hellebore root.

TIKTURA JAPONICA.

Japonic tincture.

Lond. Edinb.

Take of

- Japan earth, three ounces;
- Cinnamon, two ounces;
- Proof-spirit, two pints, ('two pounds and a half *Ed.*')

After a proper digestion, ('eight days *Ed.*') let the tincture be passed through a strainer.

A tincture of this kind, with the addition of Peruvian bark, ambergris, and musk, to the ingredients above directed, was formerly kept in the shops. The tincture here received, is preferable for general use: where any other ingredients are required, tinctures of them may be occasionally mixed with this in extemporaneous prescription. The cinnamon is a very useful addition to the Japan earth, not only as it warms the stomach, &c. but likewise as it improves the roughness and astringency of the other.

This tincture is of good service in all kinds of defluxions, catarrhs, loosenesses, uterine fluors, and other like disorders, where mild astringent medicines are indicated. Two or three tea-spoonfuls may be taken every now and then in red wine, or any other proper vehicle.

TIKTURA LACCÆ.

Tincture of gum-lac.

Edinb. +

Take of

- Gum-lac, powdered, an ounce;
- Myrrh, powdered, half an ounce;
- Spirit of scurvy-grass, a pint and a half.

Di-

Digest in a sand-heat for six days ; after which, strain off the tincture for use.

This tincture is principally employed for strengthening the gums, and in bleedings and scorbutic ulcerations of them : it may be fitted for use in these intentions, by mixing it with honey of roses, or the like. Some recommend it internally against scorbutic complaints, and as a corroborant in gleets, female weaknesses, &c Its warmth, pungency, and manifestly astringent bitterish taste, point out its virtues in these cases to be considerable, though common practice among us has not yet received it.

TINCTURA FLORUM MARTIALIUM.

Tincture of the martial flowers.
Lond.

Take of
Martial flowers, four ounces ;
Proof-spirit, one pint.
Digest and strain.

TINCTURA MARTIS.

Tincture of iron.
Edinb. +

Take of
Iron-filings, three ounces ;
Dulcified spirit of salt, two pounds.
Digest them together in a gentle heat of sand, and then filtre the tincture.

TINCTURA MARTIS in SPIRITU SALIS.

Tincture of iron in spirit of salt.
Lond.

Take of
Iron-filings, half a pound ;
Glauber's spirit of salt, three pounds ;
Rectified spirit of wine, three pints.
Digest the iron-filings in the spirit of

salt, without heat, as long as the spirit acts upon the iron : after the feces have subsided, evaporate the liquor to one pound, and add thereto the vinous spirit.

TINCTURA MARTIS.

Tincture of iron.
Edinb.

Take of
The scales of iron, purified and powdered, three ounces ;
Muriatic acid, as much as is sufficient to dissolve the powder.
Digest with a gentle heat ; and the powder being dissolved, add of rectified spirit of wine as much as will make up of the whole liquor two pounds and a half.

For the preference given to the scales of Iron, see that preparation. The strength of the muriatic acid is so variable, that the quantity is left to the judgment of the operator. If the acid is superabundant, the solution is of a green colour ; if it is fully saturated with the iron, it is more or less of a reddish or yellow colour ; and this serves as a pretty accurate criterion. As the muriatic combines less intimately with rectified spirit than any of the fossil acids, so the after-process of dulcification scarcely, if at all, impairs the solvent power of the acid ; though, when the dulcification happens to be more than usually complete, a small quantity of ferruginous matter is sometimes precipitated on adding the rectified spirit to the solution. But as the rectified spirit increases the volatility of the acid, so if it was added at first, we should lose much more of the menstruum by the heat employed during the digestion. When this tincture is well prepared, it is of a yellowish-red colour ; if the acid is superabundant, it is more or less of a greenish hue ; and if the rectified

spirit has been impregnated with the astringent matter of oak casks, it assumes an inky colour.'

ALL the tinctures of iron are no other than real solutions of the metal made in acids, and combined with vinous spirits. The three tinctures, here directed, differ from one another only in strength, the acid being the same in all: the first is the weakest, 'from the acid being still, perhaps, combined in the flowers, with a small quantity of the volatile alkali; the other two are stronger.' In our former Pharmacopœia, there was a tincture from the matter which remains after the sublimation of the martial flowers; which, though it appears to be a good one, is now expunged as superfluous. Some have recommended dulcified spirit of nitre as a menstruum; but though this readily dissolves the metal, it does not keep it suspended. The marine is the only acid that can be employed for this use.

All these tinctures are greatly preferable to the calces or croci of iron, as being not only more speedy, but likewise more certain in their operation. The latter, in some cases, pass off through the intestinal tube with little effect; whilst the tinctures scarce ever fail. From ten to twenty drops of either of the tinctures, may be taken two or three times a day, in any proper vehicle; though it is seldom advisable to extend the dose so far as the last of these quantities, especially in regard to the tincture in spirit of salt, which is exceeding strong of the iron.

TINCTURA MELAMPODII.

Tincture of melampodium, or black hellebore.

Lond. and Edinb.

Take of

Black-hellebore roots, four ounces;

Cochineal, two scruples ('half a dram *Ed.*'); ;

Proof-spirit, two pints ('two pounds and a half *Ed.*').

Digest them together ('eight days *Ed.*'), and afterwards filtre the tincture through paper.

THIS is perhaps the best preparation of hellebore, when designed for an alterative, the menstruum here employed extracting the whole of its virtues. It has been found, from experience, particularly serviceable in uterine obstructions; in sanguine constitutions, where chalybeates are hurtful, it seldom fails of exciting the menstrual evacuations, and removing the ill consequences of their suppression. So great is the power of this medicine, that wherever, from an ill conformation of the parts, or other causes, the expected discharge does not succeed upon the use of it, the blood, as Dr Mead has observed, is so forcibly propelled, as to make its way through other passages. A teaspoonful of the tincture may be taken twice in a day in warm water, or any other convenient vehicle.

The college of Edinburgh had formerly a tincture of this root with wine. Proof-spirit is undoubtedly preferable, both as a menstruum, and as being better fitted for keeping.

TINTURA MYRRHÆ.

Tincture of Myrrh.

Lond. and Edinb.

Take of

Myrrh, three ounces;

Proof-spirit, two pints ('two pounds and a half *Ed.*').

After due digestion ('ten days *Ed.*'), strain off the tincture.

THE pharmaceutical writers in general have been of opinion, that no good tincture can be drawn from myrrh by spirit of wine alone, with-
out

out the assistance of fixed alkaline salts. But it appears from proper experiments, that these salts only heighten the colour of the tincture, without enabling the menstruum to dissolve any more than it would by itself. Rectified spirit extracts, without any addition, all that part of the myrrh in which its peculiar smell and taste reside, viz. the resin: and proof-spirit dissolves almost the whole of the drug, except its impurities.

Tincture of myrrh is recommended internally for warming the habit, attenuating viscid juices, strengthening the solids, opening obstructions, particularly those of the uterine vessels, and resisting putrefaction. Boerhaave greatly esteems it in all languid cases, proceeding from simple inactivity; in those female disorders which are occasioned by an aqueous, mucous, stuggish indisposition of the humours, and a relaxation of the vessels; in the fluor albus, and all diseases arising from a like cause. The dose is from fifteen drops to forty or more. The medicine may doubtless be given in these cases to advantage; though with us, it is more commonly used externally, for cleansing foul ulcers, and promoting the exfoliation of carious bones.

TINCTURA MYRRHÆ et ALOES.

Tincture of myrrh and aloes.

Edinb. +

Take of

Myrrh, in powder, one ounce and a half;

Hepatic aloes, in powder, one ounce;

Rectified spirit of wine, two pints.

Digest in a sand-heat for six days, and then let the tincture be strained off.

THIS tincture is employed only in surgical dressings, for cleansing foul ulcers, restraining the progress of gangrenes, &c. in which intention the aloes is an useful addition to the myrrh. The hepatic aloes is reckoned more effectual for these purposes than the finer Socotrine.

TINCTURA THEBAICA, Vulgo LAUDANUM LIQUIDUM.

Tincture of opium, commonly called liquid laudanum.

Edinb.

‘Take of

Opium, two ounces;

Spirituos cinnamon-water, one pound and a half.

Digest four days, and strain off the tincture.’

THIS is a very elegant liquid opiate, the menstruum dissolving nearly the whole substance of the opium, and effectually covering its ill flavour. The proportion of menstruum is somewhat larger than in the vinous tincture formerly described: one grain of opium goes to about twenty drops of that tincture, and twenty-five of this; nevertheless, as there appears to be more of the opium dissolved here than in the other, this tincture may possibly be the strongest of the two. It were to be wished that the shops were furnished with a liquid opiate, in which the proportion of menstruum was still much larger, so as to admit of the dose being determined by weight or measure; the method by drops seeming too precarious for a medicine of so powerful a kind. The following preparation is contrived with this view.

Take of

Thebaic extract, half a dram;

X 4

Highly

Highly rectified spirit of wine,
called *alcohol*, ten ounces;

Simple cinnamon-water, twenty
-ounces.

Digest them together until the opium is dissolved, and then filter the solution through paper.

THIS preparation I apprehend to be free from all the inconveniences attending the common opiate tinctures. The menstruum dissolves the whole of the opium, except the impurities, and consequently the tincture is not liable to any uncertainty in point of strength. The dose may be ascertained to the greatest exactness: one grain of opium is contained in one ounce by measure, which is equal nearly to seven drams by weight. Neither the tinctures in wine nor proof-spirit are so well adapted for keeping as could be wished; in long standing, a part of the opium is gradually thrown off from both, and consequently the tinctures become gradually weaker: the part, which thus separates, amounts sometimes, as I have been informed, to near one-fourth of the quantity of opium at first dissolved; it floats on the surface of the vinous tincture, and in the spirituous sinks to the bottom. In the preparation here recommended, it has not been observed that any separation happens.

Instead of the cinnamon-water, pure water may be employed in the mixture; and where aromatic additions are wanted, either in a medicinal intention, or for covering the ill smell of the opium, any proper tincture or distilled water may be extemporaneously joined. Saffron, an addition employed by the Edinburgh College, has been looked upon as a corrector of opium; but the qualities it was supposed to correct, are merely imaginary: nor

indeed can that article be of much importance in any intention in the small quantity that enters a dose of the tincture; a grain of opium being accompanied with only half a grain of saffron.

‘As modern physicians are much more bold in giving opium than their predecessors, such a scrupulous accuracy in the dose is not thought at all necessary.’

TINCTURA RHABARBARI. SPIRITUOSA.

*Spirituous tincture of rhubarb.
Lond.*

Take of

Rhubarb, two ounces;
Lesser cardamom seeds, husked,
half an ounce;
Saffron, two drams;
Proof-spirit, two pints.

Digest without heat, and strain off the tincture for use.

TINCTURA RHEI.

*Tincture of rhubarb.
Edinb.*

‘Take of

Rhubarb, three ounces;
Lesser cardamom seeds, half an
ounce;
Proof-spirit, two pounds and a
half.

Digest seven days, and strain.’

TINCTURA RHEI AMA- RA.

*Bitter tincture of rhubarb.
Edinb.*

‘Take of

Rhubarb, two ounces;
Gentian-root, half an ounce;
Virginian snake-root, one dram;
Proof-spirit, two pounds and a
half.

Digest for seven days, and then strain the tincture.’

TINC.

TINCTURA RHEI DULCIS.

*Sweet tincture of rhubarb.**Edinb.*

It is made by adding to the strained tincture of rhubarb (viz. two pounds and a half of it) four ounces of sugar-candy.

THE last of these preparations is improved from the former editions. Two ounces of liquorice and one of raisins are supplied by an increase of the sugar.

All the foregoing tinctures of rhubarb are designed as stomachics and corroborants, as well as purgatives: spirituous liquors excellently extract those parts of the rhubarb in which the two first qualities reside, and the additional ingredients considerably promote their efficacy. In weakness of the stomach, indigestion, laxity of the intestines, diarrhoeas, colicky and other like complaints, these medicines are frequently of good service: the second is also, in many cases, an useful addition to the Peruvian bark, in the cure of intermittents, particularly in cachectic habits, where the viscera are obstructed; in these intentions, a spoonful or two may be taken for a dose, and occasionally repeated.

TINCTURA SATURNINA.

*Saturnine tincture.**Lond.*

Take of

Sugar of lead,

Green vitriol, each two ounces;

Rectified spirit of wine, two pints.

Reduce the salts separately into a powder; then add the spirit, and digest them together without heat; afterwards filtre the tincture thro' paper.

TINCTURA ANTIPHTHISICA.

*Antiphtthical tincture.**Edinb.*

Take of

Sugar of lead, an ounce and a half;

Vitriol of iron, an ounce;

Rectified spirit of wine, one pound.

Let a tincture be extracted without heat.

THE reducing of the salts *separately* into powder, and performing the digestion *without heat*, are very necessary circumstances: for if the ingredients are attempted to be pulverized together, they will grow soft and almost liquid; and if heat is made use of, scarce any tincture will be obtained.

These tinctures are sometimes given from twenty to thirty drops, for restraining immoderate secretions, particularly the colliquative sweats attending hectic fevers and phthysical disorders, whence the name *antiphtthical* tincture. They are undoubtedly medicines of great efficacy in these cases, but too dangerous ones to be rashly ventured on. Some have supposed, that they do not contain any of the sugar of lead: but experiments, made for that purpose, have shown that they do; and therefore the London College has very judiciously changed the title of their tincture into one expressing its being a preparation of lead.

We must, however, consider the above preparations as very unscientific. Both the acetous and vitriolic acid have a greater attraction for iron than for lead: and though the vitriolic is capable of discharging the acetous acid, yet the vitriolic makes not only in its entire state a less perfect union with lead than the acetous acid, but the vitriolic

olic acid is now also combined with iron, for which it has a greater attraction, and can therefore only act on the salt of lead in proportion as it is superabundant in the salt of copperas; but in proportion as the vitriolic disengages the acetous acid from the lead, the last, in its turn, will attach itself to the iron. Upon the whole, it is difficult to ascertain the precise nature of this preparation; it seems always, however, to contain a quantity of lead in a saline state sufficient to expunge it from prudent practice.'

TINCTURA SENNÆ.

Tincture of senna.
Lond.

Take of
Raisins, stoned, sixteen ounces;
Senna, one pound;
Caraway seeds, one ounce and a half;
Lesser cardamoms, husked, half an ounce;
Proof-spirit, one gallon.
Digest without heat, and then strain the tincture.

TINCTURA SENNÆ COMPOSITA, vulgo ELIXIR SALUTIS.

Compound tincture of senna, commonly called Elixir of health.
Edinb.

Take of
Senna leaves, two ounces;
Jalap root, one ounce;
Coriander seeds, half an ounce;
Proof-spirit, two pounds and a half.
Digest seven days, and to the strained liquor add four ounces of sugar-candy.'

BOTH these tinctures are useful carminatives and cathartics, especially to those who have accustomed themselves to the use of spirituous liquors; they oftentimes relieve fla-

ulent and colicky complaints, where the common cordials have little effect: the dose is from one to two ounces. Several preparations of this kind have been offered to the public under the name of Daffy's elixir: the two above are equal to any, and superior to most of them. 'The last in particular is a very useful addition to the castor oil, in order to take off its mawkish taste; and as coinciding with the virtues of the oil, it is therefore much preferable to brandy, shrub, and such like liquors, which otherwise are often found necessary to make the oil fit upon the stomach.'

TINCTURA SERPENTARIE.

Tincture of snakeroot.
Lond.

Take of
Virginian snakeroot, three ounces;
Proof-spirit, two pints.
Digest without heat, and strain off the tincture.

THE tincture of snakeroot was in a former pharmacopœia directed with the *tinctura salis tartari*, which being now expunged, it was proposed to the college to employ rectified spirit; but as the heat of this spirit prevents the medicine from being taken in so large a dose as it might otherwise be, a weaker spirit was made choice of. The tincture made in this menstruum, which extracts the whole virtues of the root, may be taken to the quantity of a spoonful or more every five or six hours.

Edinb.

Take of
Virginian snakeroot, two ounces;
Cochineal, one dram;
Proof-spirit, two pounds and a half.

Digest

Digest in a gentle heat for four days, and then strain the tincture.

TINCTURA STOMACHICA.

Stomachic tincture.

Lond.

Take of

Raisins, stoned, four ounces;
Cinnamon, half an ounce;
Caraway seeds,
Lesser cardamoms husked,
Cochineal, each two drams;
Proof-spirit, two pints.

Digest without heat, and strain off the tincture.

THIS is a moderately warm stomachic tincture, much more pleasant than the USQUEBAUGH of our former pharmacopœias. It may be taken, without any vehicle, to half an ounce or an ounce, though oftener used in mixtures. 'It might very well be spared.'

TINCTURA STYPTICA.

Styptic tincture.

Lond.

Take of

Green vitriol calcined, one dram;
French brandy (such as has acquired a yellowish tinge from the cask) two pints.

Mix them together, that the spirit may grow black; then pass it through a strainer.

SOME have supposed, that no other spirit than French brandy would succeed in striking the black colour, for which this tincture is valued. But any spirit that has gained an impregnation from the oak casks, which these kinds of liquors are generally kept in, or from other vegetable astringents, will equally exhibit this phenomenon; and French brandy will not do it without such assistance. The title of this tincture expresses its medicinal intention. The celebrated STYPTIC OF HEL.

VETIUS (which is said to be the same with that of EATON) differs from it no otherwise, than in being more operose in composition. They are recommended both for internal use, and for restraining external hæmorrhages: their virtues do not seem to depend so much on the iron, as on the menstruum, the quantity of metal dissolved being extremely small. In keeping, the iron is apt to separate, and the liquor to lose its black colour.

TINCTURA SUCCINI.

Tincture of amber.

Take of

Yellow amber, two ounces;
Rectified spirit of wine, twenty ounces.

Digest in a sand-heat for eight days, and afterwards filtre the tincture.

THIS is a very elegant preparation of amber, of a grateful balsamic taste, and fragrant smell. Boerhaave, Hoffman, and others, strongly recommend it in disorders proceeding from a lax state of the solids and debility of the nervous system; in suppressions of the menstrual discharges, the fluor albus, feminal gleets, rheumatic complaints, and some kinds of epilepsies: it is directed to be taken from ten to an hundred drops, in Canary or other rich wine.

The medicine is doubtless an efficacious one; though it would be much more so, if a part of the spirit was drawn off, so as to leave what it had extracted from the amber concentrated into the consistence of a balsam: a tea spoonful of this may be taken three or four times a-day, with sugar, or in any convenient vehicle. The spirit distilled off, which is richly impregnated with the amber smell, may be reserved for extracting a fresh tincture from another parcel of amber. A tincture of
amber,

amber, made in this spirit, possesses the whole virtue of the concrete, and appears to be one of the most valuable preparations of it.

Fixt alkaline salts have been commonly employed in the preparation of this tincture, but with no good effect; for they not only do not promote the dissolution of the amber, but likewise injure the medical virtue of the preparation. Scarcely any of the substances that have been made trial of, give any considerable assistance to spirit of wine in dissolving this concrete, except the vitriolic acid; which, when intimately combined with it into a dulcified spirit, forms a menstruum said to be much more efficacious for amber than the simple vinous spirit. The College of Edinburgh have accordingly, in the late reformation of their Pharmacopœia †, made choice of this menstruum, and directed the tincture as follows.

Take of

Yellow amber, two ounces;

Dulcified spirit of vitriol, one pint.

Digest them in a sand-bath, with a gentle heat, for four days, and then filtre the tincture.

TINCTURA SUDORIFICA.

Sudorific tincture.

Edinb. †

Take of

Virginian snakeroot, six drams;

Cochineal,

English saffron, each two drams;

Opium, one scruple;

Spirit of Mindererus, one pint.

Digest them together in a gentle heat for three days, and then pass the tincture through a strainer.

This composition is an efficacious sudorific; the ingredients being of the most powerful kind, and the menstruum not only extracting those parts of them in which their virtues

consist, but co-operating strongly in the same intention. Russia castor, a supernumerary ingredient in former editions, is now omitted: and cochineal, which from the quantity of it formerly employed seemed to have been designed with a medicinal view, is now reduced to one half; and nothing more is expected from it, than to furnish an agreeable colour to the tincture. Half an ounce of the tincture, by measure, contains five-eighths of a grain of opium.

TINCTURA SULPHURIS.

Tincture of sulphur.

Take of

Rectified spirit of wine, one pint.

Hepar sulphuris (that is, a mixture of sulphur and fixt alkaline salt melted together) four ounces.

Grind the hepar into powder whilst hot from the fire, add to it the spirit, and digest in a moderate heat for twenty-four hours; then pour off the tincture from the feces.

THE digestion may be commodiously performed in a glass receiver: put the spirit first into the vessel, and pour the hot powder upon it; then shake them together; and, to prevent the exhalation of any part of the spirit during the digestion, insert a glass tube into the mouth of the receiver.

This tincture is of a rich gold colour, a hot aromatic taste, and a particular, not ungrateful smell. Its virtues are those of a warm attenuating, aperient, and anti-acid medicine. Some have recommended it as a last resource in phthises and ulcerations of the lungs; but in these cases it promises little service, and has been sometimes found prejudicial. The dose is from ten to sixty drops: it is most commodiously taken in Canary or other rich wines.

TINC.

TINCTURA ANTIMONII.

Tincture of antimony. *Lond.*

Take of

Any fixt alkaline salt, one pound;
Antimony, half a pound;

Rectified spirit of wine, two pints.

Reduce the antimony into powder, mix it with the salt, and melt them together, with a strong fire, for an hour. Then pour out the matter, pulverize it, add the spirit, and digest them for three or four days: after which, strain off the tincture for use.

Edinb. +

Take of

Antimony, in powder, four ounces;

Salt of tartar, six ounces;

Rectified spirit of wine, two pints.

Mix the antimony with the salt of tartar, and inject them by little and little into a crucible placed in a strong fire. The mixture melts thin, and is to be continued in this state for half an hour; after which it is to be poured out into a hot and dry iron mortar. Powder the mass while hot, put it into a heated matras, and pour thereon the spirit. Digest them together for three days in a gentle heat of sand; and then decant the tincture.

In these processes, the alkaline salt unites with the sulphur of the antimony into a hepar; which communicates to the spirit a tincture similar to the foregoing. This antimonial tincture is supposed to contain likewise some of the reguline parts of the mineral, and is said to have sometimes provoked a puke when taken on an empty stomach, even in a small dose. It stands recommended, in doses of from ten to sixty drops or more, as a deobstruent, promoter of urine, and purifier of

the blood. See KERMES MINERALIS.

TINCTURA ANTIMONII DIAPHORETICI.

Tincture of diaphoretic antimony.

Take of

Diaphoretic antimony, sixteen ounces;

Nitre, four pounds;

Tartarized spirit of wine, three pints.

Let the antimony and nitre be finely powdered, mixed, injected by a spoonful at a time into a red-hot crucible, and kept in a strong melting heat for half an hour. Then pour the matter into a warm iron mortar, powder it whilst hot, and immediately add the vinous spirit. Digest for three days, and filtre the tincture for use.

THIS tincture is recommended for the same purposes as the foregoing, and in the same dose. It is very fragrant in smell, and agreeable to the taste. 'As the diaphoretic antimony is a perfect calx of the metal, the nitre and the alkali of the rectified spirit form an imperfect and useless compound with the inert calx of antimony.'

TINCTURA TOLUTANA.

*Tincture of balsam of Tolu.**Edinb.*

Take of

Balsam of Tolu, an ounce and a half;

Rectified spirit of wine, one pound.

Digest until the balsam is dissolved; and then strain the tincture.

THIS solution of balsam of Tolu possesses all the virtues of the balsam itself. It may be taken internally, in the several intentions for which this valuable balsam is proper, to the quantity of a tea-spoonful or two,

in any convenient vehicle. Mixed with the plain syrup of sugar, it forms an elegant balsamic syrup.

TINCTURA VALERIANÆ SIMPLEX.

Simple tincture of valerian.

Lond.

Take of

Wild valerian root, four ounces;

Proof-spirit, two pints.

After due digestion, strain off the tincture.

THE valerian root ought to be reduced into fine powder, otherwise the spirit will not sufficiently extract its virtues. The tincture proves of a deep colour, and considerably strong of the valerian; though it has not been found to answer so well in the cure of epileptic disorders as the root in substance, exhibited in the form of powder or bolus. The dose of the tincture is, from half a spoonful to a spoonful or more two or three times a-day.

TINCTURA VALERIANÆ VOLATILIS.

Volatile tincture of valerian.

Lond.

Take of

Wild valerian root, four ounces;

Volatile aromatic spirit, two pints.

Digest without heat, in a vessel closely stopp'd, and afterwards strain off the tincture.

Edinb.

• Take of

Wild valerian root, two ounces;

Vinous spirit of sal ammoniac, one pound.

Macerate six days in a close vessel, and strain.

• BOTH the volatile and vinous spi-

rit of sal ammoniac are here excellent menstrua,' and at the same time considerably promote the virtues of the valerian, which in some cases wants an assistance of this kind. The dose may be a tea-spoonful or two.

TINCTURA VERATRI.

Tincture of veratrum, or white hellebore.

Lond. and Edinb.

Take of

White hellebore root, eight ounces;

Proof-spirit, two pints. ('Two pounds and a half, *Edinb.*')

Digest them together, ('ten days, *Edinb.*') and filtre the tincture through paper.

THIS tincture is sometimes used for acuating cathartics, &c. and as an emetic in apoplectic and maniacal disorders. It may likewise be so managed, as to prove a powerful alterative and deobstruent, in cases where milder remedies have little effect. But a great deal of caution is requisite in its use: the dose, at first, ought to be only a few drops; if considerable, it proves violently emetic or cathartic.

BALSAMUM GUAIAICINUM.

Balsam of guaiacum.

Lond.

Elixir guaiacinum.

Edinb.

Take of

Gum guaiacum, one pound;

Balsam of Peru, three drams;

Rectified spirit of wine, two pints and a half. ('Two pounds and a half, *Edin.*')

Digest till the gum is dissolved, ('ten days, *Edin.*') and then strain off the balsam.

• ELIXIR

ELIXIR GUAIA CINUM VOLATILE.

*Volatile elixir of guaiac.
Edinb.*

Take of
Gum guaiacum, four ounces;
Balsam of Peru, two drams;
Distilled oil of saffraſas, one half
dram;
Vinous ſpirit of ſal ammoniac, one
pound and a half.
Macerate ſix days, in a cloſe veſſel,
and ſtrain.

THESE compositions, 'and eſpecially the laſt,' are medicines of great efficacy, and capable of anſwering many uſeful purpoſes. They warm and ſtrengthen the habit, and promote inſenſible perſpiration. Twenty or thirty drops, 'or a tableſpoonful,' may be taken two or three times a-day, or oftener, in any proper vehicle, in rheumatic complaints, cutaneous defecations, &c. particularly where the patient is of a cold phlegmatic temperament, and the ſolids weak and relaxed. In hot bilious conſtitutions, and tenſity or rigidity of the veſſels, like other ſtimulating medicines, they are evidently improper.

BALSAMUM COMMENDATORIS.
Baume de commandeur.

Take of
Dry Peruvian baſam, one ounce;
Storax in the tear, two ounces;
Benjamin, three ounces;
Socotorine aloes,
Myrrh,
Olibanum,
Angelica roots,
St John's wort flowers, each half
an ounce;
Spirit of wine, two pounds eight
ounces by weight.
Let them ſtand together in the ſun
during the dog-days, in a glaſs
veſſel, cloſely ſtopped; and after-

wards ſtrain out the baſam thro'
a linen cloth.

THIS baſam has been inſerted, with little variation, in ſome foreign pharmacopœias, and likewise kept a ſecret in private hands, under the titles of *Baſamum Perſicum*, *Baſam of Berne*, *Wade's baſam*, *Friar's baſam*, *Jefuit's drops*, &c. The form above is taken from the original receipt published by Pomet (*Hiſtoire de Drogues*, edit. 2. tom. ii. p. 56.) It ſtands greatly recommended, externally, for cleaning and healing wounds and ulcers, for diſcuſſing cold tumours, allaying gouty, rheumatic, and other old pains and aches; and likewise internally, for warming and ſtrengthening the ſtomach and inteſtines, expelling flatulencies, and relieving colicky complaints. Outwardly, it is applied cold on the part with a feather; inwardly, a few drops are taken at a time, in wine or any other convenient vehicle. 'It ſeems to have got far too much to do; and is undoubtedly a very confused farrago of diſcordant ſubſtances.'

BALSAMUM TRAUMATICUM.

*Traumatic or vulnerary baſam.
Lond.*

Take of
Benzoine, three ounces;
Storax, ſtrained, two ounces;
Baſam of Tolu, one ounce;
Socotorine aloes, half an ounce;
Rectified ſpirit of wine, two pints.
Digelt, that the gums may as much
as poſſible be diſſolved; and then
ſtrain off the baſam for uſe.

THIS is an elegant reformation of the preceding compoſition, conſiderably more ſimple, yet not inferior in efficacy. The baſam of Tolu ſupplies, with advantage, the dry
Peru-

Peruvian balsam, a drug very rare to be met with in this country: the olibanum, myrrh, and angelica roots here omitted, were certainly superfluous in a medicine containing so much more powerful materials; and the St John's wort flowers are as deservedly thrown out, as having little else to recommend them than prejudice or superstition.

Edinb.

Take of
Benzoin, three ounces;
Balsam of Peru, two ounces;
Hepatic aloes, half an ounce;
Rectified spirit of wine, two pounds.

Digest them in a sand-heat, for the space of ten days; and then strain the balsam.

THIS is a further contraction of the *baume de commandeur*, without any injury to it as a medicine, at least with regard to the purposes for which the title shows it designed. Socotorine aloes is here judiciously exchanged for the hepatic, which appears from experience to be the most serviceable in external applications.

ELIXIR ALOES.

Elixir of aloes.

Lond.

Take of
Tincture of myrrh, two pints;
Socotorine aloes,
Saffron, each three ounces.
Digest them together, and strain off the elixir.

ELIXIR ALOES, vulgo PROPRIETATIS.

Edinb.

Take of
Myrrh, in powder, two ounces;
Socotorine aloes, an ounce and a half;
English saffron, one ounce;

Rectified spirit of wine,
Proof-spirit, of each one pound.
Digest the myrrh with the spirit for the space of four days; then add the aloes in powder, and the saffron: continue the digestion for two days longer, suffer the feces to subside, and pour off the clear elixir.

THIS is the *elixir proprietatis* of Paracelsus, improved with regard to the manner of preparation. The myrrh, saffron, and aloes, have been usually directed to be digested in the spirit together; by this method, the menstruum soon loads itself with the latter, so as scarce to take up any of the myrrh; whilst a tincture, extracted first from the myrrh, readily dissolves a large quantity of the others. The alkaline salt, commonly ordered in these preparations with a view to promote the dissolution of the myrrh, we have already observed to be useless; and accordingly it is now omitted. Instead of employing the rectified spirit alone, the Edinburgh College have used an equal proportion of proof-spirit, which is not only a more complete menstruum, but also renders the medicine less heating.

This medicine is greatly recommended, and not undeservedly, as a warm stimulant and aperient. It strengthens the stomach and other viscera, cleanses the first passages from tenacious phlegm, and promotes the natural secretions in general. Its continued use has frequently done good service in cachectic and icteric cases, uterine obstructions, and other like disorders; particularly in cold, pale, phlegmatic habits: where the patient is of a hot, bilious constitution, and florid complexion, this warm stimulating medicine is less proper, and sometimes prejudicial. The dose may be from twenty drops to a tea-spoonful

or

or more, two or three times a-day, according to the purposes which it is intended to answer.

ELIXIR ALOES five
PROPRIETATIS VITRI-
OLICUM.

*Vitriolic elixir of aloes or
of property.*
Edinb.

Take of
Myrrh,
Socotorine aloes, of each an ounce
and a half;
English saffron, one ounce;
Dulcified spirit of vitriol, one
pound.

Digest the myrrh with the spirit
four days, in a close vessel; then
add the saffron and aloes.

Digest again four days; and when
the feces have subsided, pour out
the elixir.

THE Edinburgh College have
also reformed this preparation con-
siderably; and especially by direc-
ting the myrrh to be digested first,
for the same reasons as were obser-
ved on the preceding article. Here
the dulcified spirit of vitriol is very
judiciously substituted to the spirit
of sulphur, ordered in other books
of pharmacy to be added to the fore-
going preparation; for that strong
acid precipitates from the liquor
great part of what it had before ta-
ken up from the other ingredients;
whereas, when the acid is previously
combined with the vinous spirit, and
thereby dulcified, as it is called, it
does not impede its dissolving power.
This elixir possesses the general vir-
tues of the preceding, and is, in
virtue of the menstruum, prefer-
red to it in hot constitutions, and
weaknesses of the stomach. See
ELIXIR VITRIOLI in the following
page.

ELIXIR PAREGORICUM.

Paregoric elixir.

Lond.

Take of

Flowers of benzoine,
Opium strained, each one dram;
Camphor, two scruples;
Essential oil of aniseeds, half a
dram;
Rectified spirit of wine, two pints.
Digest, and strain.

Edinb.

Take of

Flowers of benzoine,
English saffron, of each three
drams;
Opium, two drams;
Essential oil of aniseeds, half a
dram;
Vinous spirit of sal ammoniac,
sixteen ounces.
Digest four days in a close vessel,
and strain.

THE most material differences
in the above formula from the pre-
ceding, are the substitution of the
vinous spirit of sal ammoniac to the
rectified spirit of wine, and a larger
proportion of opium; the vinous
spirit of sal ammoniac is not only,
perhaps, a more powerful men-
struum, but in most instances coin-
cides with the virtues of the prepa-
ration; but as the opium is the in-
gredient on which we place the prin-
cipal dependance, so its proportion
is increased, in order that we may
give it in such a dose as that the a-
crimony of the menstruum shall not
prove hurtful to the stomach.

The London formula is taken
from Le Mort, with the omission of
three unnecessary ingredients, ho-
ney, liquorice, and alkaline salt. It
was originally prescribed under the
title of **ELIXIR ASTHMATICUM**,
which it does not ill deserve. It
contributes to allay the tickling,
Y which

which provokes frequent coughing; and at the same time, is supposed to open the breast, and give greater liberty of breathing: the opium procures (as it does by itself) a temporary relief from the symptoms; whilst the other ingredients tend to remove the cause, and prevent their return. It is given to children against the chincough, &c. from five drops to twenty; to adults, from twenty to an hundred. Half an ounce by measure contains about a grain of opium; 'but in the Edinburgh formula the proportion of opium is larger.'

ELIXIR PECTORALE.

Pectoral elixir.

Edinb. +

Take of

Balsam of Tolu, two ounces;
Balsam of Peru, one ounce;
Flowers of benzoine,
English saffron, each half an ounce;

Rectified spirit of wine, two pints.

Digest them in a sand-heat for three days, and then strain off the elixir.

THIS balsamic elixir is given to the quantity of a tea-spoonful, two or three times a-day, as an expectorant and detergent, in coughs and ulcerations of the breast. The balsam of Peru is a new ingredient, introduced in the present edition; and the flowers of benzoine are substituted to benzoine in substance: 'very much caution is, however, necessary in the use of these stimulating substances.'

ELIXIR VITRIOLI ACIDUM.

Acid elixir of vitriol.

Lond.

Take of the

Aromatic tincture, one pint;

Strong spirit (called oil) of vitriol, four ounces;

Mix them together; and after the fumes have subsided, filtre the elixir through paper.

THIS preparation was originally taken from Mynsicht, and has been usually distinguished by his name. It is here prepared in a somewhat different manner from that directed by the author, and in other books of pharmacy; the oil of vitriol and spirit of wine being there first mixed together, and then digested upon aromatics.

Mynsicht's elixir of vitriol is directed in our preceding pharmacopœia as follows:

Take of

Cinnamon,

Ginger,

Cloves, each three drams;

Calamus aromaticus, one ounce;

Galangal, an ounce and a half;

Sage, .

Mint, each half an ounce;

Cubebs,

Nutmegs, each two drams;

Aloes wood,

Citron-peel, each one dram.

Reduce these ingredients into a powder; to which add of

Sugar-candy, three ounces;

Spirit of wine, a pint and a half;

Oil of vitriol, one pint.

Digest them together for twenty days, and then filtre the tincture for use.

Edinb.

'Take of

Rectified spirit of wine, two pounds;

Drop into it by little and little of vitriolic acid, six ounces.

Digest the mixture with a very gentle heat, in a close vessel, three days; then add,

Of cinnamon, an ounce and a half;

Ginger, one ounce;

Digest again in a close vessel six days, and then filtre the tincture through

through paper placed in a glass funnel.

THE intention in these processes is, to obtain a tincture of aromatic vegetables, in spirit of wine, combined with a considerable proportion of vitriolic acid. When the tincture is first drawn with vinous spirit, and the acid added afterwards, as in the first of the above prescriptions, the acid precipitates great part of what the spirit had before taken up; and on the other hand, when the acid is mixed with the spirit immediately before the extraction, as in the second process, it prevents the dissolution of all that it would have precipitated by the former way of treatment: by previously uniting the acid and the vinous spirit together by digestion, as in the last process, the inconvenience is somewhat lessened.

All these compositions are valuable medicines in weakness and relaxations of the stomach and decays of constitution, particularly in those which proceed from irregularities, which are accompanied with slow febrile symptoms, or which follow the suppression of intermittents. They have frequently taken place after bitters and aromatics by themselves had availed nothing; and, indeed, great part of their virtue depends on the vitriolic acid; which, barely diluted with water, has, in these cases, where the stomach could bear the acidity, produced happy effects.

Fuller relates (in his *Medicina Gymnastica*), that he was recovered, by Mynsicht's elixir, from an extreme decay of constitution, and continual retchings to vomit. They may all be given from ten to thirty or forty drops or more, according to the quantity of acid, twice or thrice a-day, at such times as the stomach is most empty. They are very usefully conjoined with the bark, both

as covering its disagreeable taste and coinciding with its virtues.

ELIXIR VITRIOLI DULCE.

Sweet elixir of vitriol.

Land.

Take of

Aromatic tincture, one pint;

Dulcified spirit of vitriol, eight ounces by weight.

Mix them together.

Edinb.

It is made of the same aromatics, and in the same manner, as the *Tinctura aromatica*; except that, in place of the vinous spirit, the dulcified spirit of vitriol is employed.

THESE are designed for persons whose stomach is too weak to bear the foregoing acid elixir: to the taste, they are gratefully aromatic, without any perceptible acidity. The dulcified spirit of vitriol, here directed, occasions little or no precipitation upon adding it to the tincture.

A medicine of this kind was formerly in great esteem under the title of VIGANI'S VOLATILE ELIXIR OF VITRIOL; the composition of which was first communicated to the public in the *Pharmacopœia reformatæ*. It is prepared by digesting some volatile spirits of vitriol upon a small quantity of mint leaves curiously dried, till the liquor has acquired a fine green colour. If the spirit, as it frequently does, partakes too much of the acid, this colour will not succeed: in such case, it should be rectified from a little fixt alkaline salt, as hereafter directed in chap. viii. sect. 5. The mint is most commodiously suspended in the spirit in a fine linen cloth: this prevents the necessity of filtration, during which the more volatile parts would exhale.

Y 2

ELIXIR

**ELIXIR MYRRHÆ
COMPOSITUM.***Compound elixir of myrrh.
Lond.***Take of**

Extract of safin, one ounce;
Tincture of castor, one pint;
Tincture of myrrh, half a pint.

Digest them together, and then
strain the elixir.

THIS preparation is improved from one described in some former dispensatories under the name of **ELIXIR UTERINUM**. It is a medicine of great importance in uterine obstructions, and in hypochondriacal cases; though, possibly, means might be contrived of superadding more effectually the virtues of safin to a tincture of myrrh and castor. It may be given from five drops to twenty or thirty, or more, in pennyroyal water, or any other suitable vehicle.

**ELIXIR ex ALOE et RHEO,
vulgo SACRUM.***Elixir of aloes and rhubarb, commonly called sacred elixir.**Edinb.***Take of**

Rhubarb, cut small, ten drams;
Socotorine aloes, in powder, six drams;
Lesser cardamom seeds, half an ounce;
Proof-spirit, two pounds and a half.

Digest for seven days, and then strain the elixir. This preparation is very much employed as a warming cordial purge, and for the general purposes of aloetics.

**SPIRITUS VINOSUS
CAMPHORATUS.***Camphorated spirit of wine.
Lond.***Take of**

Camphor, two ounces;

Rectified spirit of wine, two pints.
Mix them together, that the camphor may be dissolved.

*Edinb.***Take of**

Camphor, one ounce;
Rectified spirit of wine, one pound.

Mix them together, that the camphor may be dissolved.

It may also be made with a double, triple, &c. proportion of camphor.

THIS solution of camphor is employed chiefly for external uses, against rheumatic pains, paralytic numbnesses, inflammations, for dissolving tumors, preventing gangrenes, or restraining their progress. It is too pungent to be exhibited internally, even when diluted, nor does the dilution succeed well; for on the admixture of aqueous liquors, the camphor gradually separates and runs together into little masses.

Hoffman, Rothen, and others, mention a camphorated spirit not subject to this inconvenience. It is prepared by grinding the camphor with somewhat more than an equal weight of fixt alkaline salt, then adding a proper quantity of proof-spirit, and drawing off one half of it by distillation. This spirit was proposed to the College to be received into the Pharmacopœia, at the late revival, under the title of **SPIRITUS CAMPHORÆ TARTARIZATUS**. But upon trial, it did not answer expectation: some of the camphor, as the committee observe, rises with the spirit in distillation, though but a small quantity; whence, mixed with a large portion of water, it does not sensibly render it turbid; but in a proper quantity, it exhibits the same appearance as the more common camphorated spirit: it did not appear,

appear, that spirit distilled from camphor, with or without the alkaline salt, differed at all in this respect.

The most convenient method of uniting camphor with aqueous liquors, for internal use, seems to be by the mediation of almonds, or of mucilages; triturated with these, it readily mingles with water into the form of an emulsion, at the same time that its pungency is considerably abated. It may also be commodiously exhibited in the form of an oily draught, expressed oils totally dissolving it.

TINCTURA ABSINTHII.

Tincture of wormwood.

Edinb.

‘Take of

The flowering tops of wormwood, properly dried, four ounces;
Rectified spirit of wine, two pounds.

Macerate two days; then press out the spirit; and pour it upon,
Of wormwood, two ounces.

Macerate again four days; then press the tincture through a cloth, and afterwards strain it through paper.

‘THE aromatic parts of wormwood are more especially found in the flowering tops, and its bitterness in the leaves: but as the latter are replete with a mucilaginous matter, which might impede the action of the menstruum on the aromatic parts; so in this very elegant formula, the flowerings tops are infused first, and their tincture made to extract the bitter parts of the leaves and stalks. This preparation may therefore be considered as containing the whole virtues of the plant; for a description of which, see ABSINTHIUM.’

TINCTURA e KINO.

Tincture of gum kino.

Edinb.

‘Take of

Gum kino, two ounces;

Proof-spirit, a pound and a half.

Digest eight days, and strain.

‘THE substance called gum kino seems to be really a gum-resin; on which account proof-spirit is the most proper menstruum. This preparation must therefore possess the virtues of the substance; for a description of which, see KINO.’

TINCTURA MOSCHI.

Tincture of musk.

Edinb.

‘Take of

Musk, two drams;

Rectified spirit of wine, one pound.

Digest ten days, and strain.

RECTIFIED spirit is the most complete menstruum for musk; but in this form it is often impossible to give such a quantity of the musk as is often necessary for our purpose.’

TINCTURA BENZOINI.

Tincture of benzoine.

Take of

Benzoine, four ounces;

Rectified spirit of wine, one pint.

Digest them together in a sand-heat for three or four days, and then decant off the tincture.

THIS tincture stands recommended in asthmas, and other disorders of the lungs, in doses of from twenty to sixty or seventy drops. It has, however, been principally made use of externally, as a cosmetic, for clearing and smoothing the skin: for these purposes it is mixed with a large proportion of water, when it forms into a white liquor called LAC

VIRGINIS. If this be suffered to rest for some time, the benzoine precipitates in form of a white magistery, (of a very pleasant smell, and not disagreeable taste), which in the Brandenburg pharmacopœia is preferred to the flowers of benzoine, as being free from the empyreumatic flavour which these are generally attended with: it is, however, of a different nature from the flowers, being no other than the benzoine in its whole substance; whereas the flowers are a distinct part of it, not resinous, like the rest of the mass, but rather, as we shall see hereafter, of the saline kind. The precipitation is directed to be made with rose-water.

GUTTE VITÆ.

Drops of life.

Take of

Opium, four ounces;
Saffron, one ounce;
Virginian snakeroot,
Cochineal, each half an ounce;
Nutmegs,
Zedoary, each two ounces;
Camphor, one ounce;
Tincture of diaphoretic antimony,
one pint;
Water, two pints.

Digest the opium with the water in a scalding heat, till as much as possible of it is dissolved, and pass the solution through a strainer. Digest the other ingredients in the antimonial tincture for three or four days. Mix both liquors together; let them stand in digestion for two days longer; and after the feces have subsided, pour off the clear for use.

THIS medicine has been recommended as preferable to the common opiates, and less apt to leave a nausea on the stomach: the dose is from ten drops to forty or fifty. 'Its use may be very well superseded.'

TINCTURA seu ESSENTIA AMBRÆ, *Tincture or essence of ambergris.* *Paris.*

Take of

Ambergris, one dram;
Tartarized spirit of wine,
Spirit of roses, that is, highly rectified spirit of wine drawn off from dried damask roses, each one ounce and a half.

Digest in the heat of a water-bath.

THE ambergris, if pure, is here totally dissolved into a reddish liquor, provided the heat be sufficient to make the spirit boil or simmer: with a weaker heat, or if the spirit is not highly rectified, this solution does not succeed. This tincture is a high cordial: eight or ten drops may be taken on sugar.

TINCTURA seu ESSENTIA REGIA. *The royal tincture or essence.* *Paris.*

Take of

Ambergris, two scruples;
Musk, one scruple;
Civet, ten grains;
Oil of cinnamon, six drops;
Oil of rhodium, four drops;
Salt of tartar, half a dram;
Rectified spirit of wine,
Spirit of roses,
Spirit of orange-flowers, each one ounce and a half.

Grind the salt of tartar with the ambergris, musk, civet, and essential oils, till they are thoroughly mixed; then add the spirits, and digest in a warm place for some days, frequently shaking the vessel; afterwards let the liquor settle, and pour off the clear from the dregs.

THIS tincture is a very high perfume; and by those who can bear substances of that class, may be taken, like the preceding, as a cordial. A few drops give a fine flavour to

a large quantity of other liquors. The ambergris dissolves here with less heat than in the foregoing preparation, the essential oils promoting its solution.

TINCTURA ODONTALGIA MYNSICHTI.

Mynsicht's tincture for the toothach.
Argentoratensf.

Take of

Guaiacum wood, two ounces;
Sassafras,
Sarsaparilla, each one ounce;
Pellitory of Spain,
Alum,
Sal prunellæ, each half an ounce;
Stavesacre seeds,
Henbane seeds, each two drams;
Opium,
Cloves, each one dram and a half;
Serpillum,
Origanum,
Saffron, each one dram;
Rectified spirit of wine,
Vinegar, each one pint and a half.

Reduce the dry ingredients into powder, and extract a tincture from them with the spirit and vinegar mixed.

"A LITTLE of this tincture is to be taken warm into the mouth, and repeated if there should be occasion. It effectually relieves the most violent toothachs; preventing the afflux of humours, and surprisingly extracting those already settled upon the parts; the pain seems often on the first application of it to increase, but soon after abates and goes off." The above composition, and this account of its virtues, is from the pharmacopœia of the college of Strasburgh. 'The opium, the henbane, and the hot spices in the above formula, may, no doubt, sometimes produce a temporary relief of the pain; but we alledge, that the college of Strasburgh have given it too

much to do, and that their opinion has been drawn more from faith than good works."

ESSENTIA LIGNORUM.

Essence of the woods.

Argentoratensf.

Take of

Sassafras, two ounces;
Guaiacum, three ounces;
China root,
Sarsaparilla,
Red saunders,
Yellow saunders, each one ounce;
Spirit of wine, as much as will cover the above ingredients to the height of four inches.

Digest for eight days, and then filtre the essence.

THIS essence, or tincture, is given in venereal and catarrhus disorders, and impurities of the humours in general, from a scruple to a dram or more. By gently drawing off half of the spirit, the remainder becomes proportionably stronger, and is then called *essentia lignorum concentrata*.

BALSAMUM VITÆ.

Balsam of life.

Brandenburgh.

Take of

Essential oils of Lavender,
Nutmegs,
Cloves,
Rhodium,
Serpillum, each
half a dram;
Cinnamon,
Lemon-peel,
Bergamotte, each
two scruples;

Balsam of Peru, one dram;
Highly rectified spirit of lavender, fifteen ounces.

First dissolve the balsam in the spirit, then add the oils, and digest till the whole is dissolved.

THIS fragrant balsam is an improvement on one described by Hoffman in his notes on Poterius; and is probably the same, or nearly the same, with the balsam so much celebrated afterwards in that author's practice, internally in languors, faintings, debilities of the nervous system, colics, &c. from ten to twen-

ty or thirty drops; and externally, applied to the nostrils, temples, &c. in vertiginous, lethargic, and other like complaints. Thus much is certain, from Hoffman's own writings, that his balsam was composed of fragrant oils dissolved in rectified spirit of wine.

S E C T. VII.

OILS by INFUSION and DECOCTION.

EXRESSED oils extract the resinous and oily parts of vegetables, but do not act upon the gummy and mucilaginous: hence the *oleum e mucilaginis* of the shops contains nothing of the mucilage which its ingredients abound with. These oils may be tinged, by vegetable matters, of almost all colours; the leaves of most plants communicate a green; yellow flowers, a dilute gold colour; some red flowers, a light red; alkanet root, a beautiful and deep red.

In making the officinal oils from the leaves of plants, a good deal of care is necessary, to give them the fine green colour expected in them. If the boiling of the herb in the oil is not continued till all the aqueous moisture has exhaled (the mark of which is, the herb's being crisp) the oil will have a dingy yellowish hue; if continued longer, it turns black, and contracts an empyreumatic smell. The most convenient method of managing the process seems to be, to strain off the oil when sufficiently impregnated with the virtue of the plant, and afterwards to let it stand in a clean vessel over a gentle fire, until, by frequent trials on a white tile, it appears to have gained the deep green colour required,

OLEUM CHAMÆMELI.

Oil of camomile.
Edinb. +

Take of

Camomile, with the flowers, fresh gathered and bruised, one pound;

Oil olive, three pints.

Boil them gently till the herb is almost crisp; then strain and press out the oil.

The oils of the other herbs are prepared in the same manner.

OLEUM HYPERICI.

Oil of St John's wort.
Lond.

Take of

The flowers of St John's wort, full blown, fresh gathered, and carefully freed from the cups, four ounces;

Oil olive, two pints.

Pour the oil upon the flowers, and let them stand together till the oil is sufficiently coloured.

OLEUM e MUCILAGINIBUS.

Oil of mucilages.
Lond.

Take of

Marshmallow root, fresh, half a pound;

Linseed,

Fenugreek

Fenugreek seed, each three ounces;

Water, two pints;

Oil olive, four pints.

Bruise the roots and seeds, and gently boil them in the water for half an hour: then add the oil, and continue the boiling till all the water is wasted: afterwards let the oil be carefully poured off for use.

OLEUM SAMBUCINUM.

Oil of elder.

Lond.

Take of

Elder flowers, one pound;

Oil olive, two pints.

Boil the flowers in the oil till they are almost crisp; then press out the oil, and set it by till the feces have subsided.

OLEUM VIRIDE.

Green oil.

Lond.

Take of

Bay leaves,

Rue leaves,

Marjoram leaves,

Sea-wormwood leaves,

Camomile leaves, each, fresh gathered, three ounces;

Oil olive, two pints.

Bruise the herbs and gently boil them in the oil till they are almost crisp; then press out the oil, let it stand to settle, and afterwards pour it off from the sediment.

ALL the foregoing oils are designed for external applications only. They are supposed, besides the general emollient quality of the oil itself, to receive particular virtues from the ingredients: that of camomile flowers, to be a warm discutient and resolvent; that of St John's wort flowers, to be peculiarly grateful to the nerves, to give great relief in all kinds of pains and weariness, to re-

solve tumours, and heal wounds and ulcers; and the oil of mucilages to be softer and more emollient than common oil. An oil prepared in the same manner from wormwood, rubbed on the stomach and umbilical region, is said to excite appetite, strengthen the viscera, and kill worms; and one from rue, to be of singular efficacy against worms and colicky pains and swellings.

It is presumed, however, that at present there are few who expect much more from these preparations than from common oil itself, which has the advantage of being less offensive. The mucilaginous ingredients, marshmallow-root and linseed, in the *oleum e mucilaginis*, make no addition to the virtue of the oil; for mucilages, as already observed, are not soluble in oils. Experience has not discovered any such singular qualities in the flowers of St John's wort, that four ounces of them should communicate any remarkable virtue to a quart of oil. Of the other herbs, the more valuable parts are dissipated by the boiling heat: and although the remaining matter, if it was taken internally either by itself, or dissolved in watery or spirituous liquors, might not be destitute of activity, yet it can scarcely be supposed, when combined with a large quantity of oil, to have any material effect in external applications. The number of these oils has, therefore, been judiciously retrenched at the late reformation: the five above retained, are not one-tenth part of those which were formerly ordered to be kept in the shops. The most certain way of answering the purposes intended by these preparations appears to be, by mixing with the expressed oil a suitable quantity, either of the native resins of vegetables, or of the essential oils and resinous extracts artificially prepared from them.

OLEUM

OLEUM CAMPHORATUM.*Camphorated oil.**Edinh.*

- Take of
 Fresh olive oil, two ounces;
 Camphor, half an ounce.
 Dissolve the camphor in the oil.

THIS oil is designed, like the foregoing ones, for external purposes. It has been in use for some time, in the infirmary of Edinburgh, against burns, rheumatic pains, &c. and is thence received into the Pharmacopœia of the Edinburgh college.

OLEUM ODORIFERUM.*Odoriferous oil.*

Let some fine carded cotton be dipt in oil olive, or oil of ben nuts, that it may be thoroughly imbibed with the oil, without retaining so much as to drip spontaneously. Lay a bed of this cotton in the bottom of a tin or porcelaine vessel, and lightly spread upon it a pretty thick layer of any odoriferous flowers fresh gathered, as jasmine flowers, violets, li-

lies of the valley, &c. Above these spread more of the cotton, and then more flowers alternately, till the vessel is full; then cover it close, and let it stand for twenty-four hours in a gentle warmth. Great part of the fragrance of the flowers will be communicated to the oil in the cotton, which is to be stratified in the same manner with two or three fresh quantities of the flowers, till it is sufficiently impregnated therewith, after which the oil is to be squeezed out from the cotton in a press.

THIS appears to be the most effectual method of transferring into expressed oils the odoriferous matter of those tender flowers which yield little or no essential oil; the perfumed oils and essences of those flowers brought from Italy are prepared in this manner. The odorous parts may be again separated from the oil, and transferred into water or spirit, by distillation with these liquors.

C H A P. IV.

CONSERVATION of RECENT VEGETABLES and their INFUSIONS, &c. by SUGAR and HONEY.

S E C T. I.

CONSERVES.

CONSERVES are compositions of recent vegetable matters and sugar, beaten together into an uniform mass.

This management is introduced for preserving certain simples, undried, in an agreeable form, with as little alteration as possible in their native virtues; and to some subjects it is very advantageously applied. Vegetables, whose virtues are lost or destroyed in drying, may in this form be kept uninjured for a length of time: for, by carefully securing the mouth of the containing vessel, the alteration, as well as dissipation, of their active principles, is generally prevented; and the sugar preserves them from the corruption which juicy vegetables would otherwise undergo.

There are, however, sundry vegetables whose virtues are impaired by this treatment. Mucilaginous substances, by long lying with sugar, become less glutinous; and astringents, sensibly softer upon the palate. Many of the fragrant flowers are of so tender and delicate a texture, as almost entirely to lose their

peculiar qualities on being beaten or bruised.

In general, it is obvious, that in this form, on account of the large admixture of sugar, only substances of considerable activity can be taken to advantage as medicines. And, indeed, conserves are at present considered chiefly as auxiliaries to medicines of greater efficacy, or as intermediums for joining them together. They are very convenient for reducing into boluses or pills, the more ponderous powders, as mercurius dulcis, the calces of iron, and other mineral preparations; which, with liquid or less consistent matters, as syrups, will not cohere.

The shops were formerly encumbered with many conserves altogether insignificant; the few now retained have in general either an agreeable flavour to recommend them, or are capable of answering some useful purposes as medicines. Their common dose is the bulk of a nutmeg, or as much as can be taken up at once or twice upon the point of a knife. There is in general no great danger of exceeding in this particular.

General

General Method of Preserving CONSERVES.

Leaves are picked from the stalks, and flowers from their cups. They are then beaten in a marble mortar, with a wooden pestle, into a smooth mass; after which, thrice their weight of double-refined sugar is added by degrees, and the beating continued till they are uniformly mixed.

The sugar should be pulverised by itself, and passed through a sieve, before it is mixed with the vegetable mass; otherwise it cannot easily be reduced to sufficient fineness, so as to be duly incorporated. Some vegetables are scarce reducible to the requisite fineness by beating in a mortar; such as orange-peel. This is most conveniently rasped or grated off from the fruit, then well-mixed with the sugar, and the compound set by in a close vessel for some weeks; after which it may be beaten smooth with considerable less labour than at first. This peel, and red-rose buds, are commonly ground in a wooden mill made for that purpose.

CONSERVA foliarum COCHLEARIÆ hortensis.

Conserve of the leaves of garden scurvy-grass.
L. E. +

THIS is the only form that scurvy-grass in substance can be kept in, without the total loss of its virtues. The conserve retains the full taste and virtue of the herb for a very considerable length of time; as a year or two, provided the vessel be made perfectly close, and set in a cool place. It may be given in scorbutic habits, three or four times a-day, or oftener; tho' it is more frequently used as an as-

sistant to other medicines of similar intention, than depended on by itself. It is an excellent addition to arum-root in rheumatic cases; and in this form even the fresh root arum may be taken freely, without any complaint of the excessive pungency which of itself it impresses on the tongue. An ounce of fresh arum-root, beaten into a pulp, and four ounces or less of conserve of scurvy-grass, well mixed together, form a compound, in which the pungency of the arum is hardly perceived; and which I have given, with good effect, to the quantity of a nutmeg twice or thrice a-day. To further sheath the acrimony of the arum, it may be beaten with equal its weight of powdered gum arabic, before the admixture of the conserve.

CONSERVA foliorum LUJU. LÆ.

Conserve of the leaves of wood-sorrel.
L. E. +

THIS is a very elegant and grateful conserve; in taste it is lightly acidulous, with a peculiar flavour, which some resemble to that of green-tea. It is taken occasionally for quenching thirst, and cooling the mouth and fauces, in hot distempers. It may be usefully joined to the foregoing preparation, whose virtue it somewhat promotes, at the same time that it improves the taste.

CONSERVA foliorum MENTHÆ vulgaris.

Conserve of the leaves of spearmint.
L. E.

THE conserve of mint retains the taste and virtues of the herb. It is given in weakness of the stomach and retchings to vomit; and not unfrequently does service in some cases

cases of this kind, where the warmer and more active preparations of mint would be less proper.

CONSERVA foliorum RUTÆ.

Conserve of the leaves of rue.

Lond.

THIS conserve is given from a dram to half an ounce, in crudities of the primæ viæ, for promoting digestion, and in hysteric disorders: it gently stimulates the solids, and excites the natural secretions. Some have had a great opinion of it, taken in a morning, as a preservative against the effects of contagious air or exhalation.

CONSERVA summitatum ABSINTHII maritimi.

Conserve of the tops of sea wormwood.

Lond.

THE conserve of wormwood has been celebrated in dropries: Matthiolus relates, that several persons were cured by it of that distemper without the assistance of any other medicine. Where the disorder indeed proceeds from a simple laxity or flaccidity of the solids, the continued use of this medicine may be of some service; as it appears to be a not inelegant mild corroborant. It is directed to be given in the dose of half an ounce, about three hours before meals.

CONSERVA florum LAVENDULÆ.

Conserve of lavender flowers.

Lond.

THIS conserve is not near so fragrant as the flowers themselves. It is nevertheless a sufficiently agreeable one; and is sometimes used as a mild cordial, and in debilities of the nervous system.

CONSERVA florum MALVÆ.

Conserve of the flowers of mallows.

Lond.

THIS is looked upon as an emollient, and sometimes made use of as such in disorders of the breast and urinary passages. It is the most unimportant of conserves: nor do the flowers themselves appear to have much virtue.

CONSERVA florum ROSARUM

rubrarum immaturarum.

Conserve of the buds of red roses.

L. E.

THIS is a very agreeable and useful conserve. A dram or two dissolved in warm milk, are frequently given as a light restraining, in weakness of the stomach, and likewise in coughs and phthifical complaints. In the German Ephemerides, examples are related of very dangerous phthises cured by the continued use of this medicine: In one of these cases, twenty pounds of the conserve were taken in the space of a month; and in another, upwards of thirty. Riverius mentions several other instances of this kind. 'There is, however, much room for fallacy in such observations; as phthisis has not at all times been accurately distinguished from obstinate catarrhs, and some other affections: the antiseptic property of the sugar may have a considerable share in the effect.'

CONSERVA florum RORIS-MARINI.

Conserve of rosemary-flowers.

L. E. +

ROSEMARY flowers in great measure lose their peculiar fragrance by beating; and hence the conserve has very little of their flavour. Some are

are therefore accustomed to make this preparation from the leaves of the plant (which retain their virtues under the pestle), or at least to add a portion of these to the flowers. The conserve of rosemary is directed in weakness of the nerves, and as a light cordial.

**CONSERVA flavedinis CORTI-
CUM AURANTIORUM**
Hispalensium.

*Conserve of the yellow rind of Seville
orange-peel.*

L. E.

THIS conserve is a very elegant one, containing all the virtues of the peel in a form sufficiently agreeable, both with regard to the dose and the convenience of taking. It is a pleasant warm stomachic; and in this intention is frequently made use of.

**CONSERVA FRUCTUS CY-
NOSBATI.**

Conserve of hips.

L. E. +

Hips require less sugar for reducing them into a conserve than the substances above enumerated. Twelve ounces of the pulp of the ripe fruit are to be mixed with only twenty ounces of sugar. In the Edinburgh Pharmacopœia, the sugar is directed in the same

proportion as in the other conserves.

THE conserve of hips is of some esteem as a soft, cooling refrigerant; three or four drams or more are given at a time, in bilious fluxes, sharpness of urine, and hot indispersions of the stomach. A good deal of care is requisite on the part of the apothecary in making this conserve: the pulp is apt to carry with it some of the prickly fibres, which the inside of the fruit is lined with; if these are retained in the conserve, they will irritate the stomach, so as to occasion vomiting.

**CONSERVA PRUNORUM
SILVESTRIUM.**

Conserve of sloes.

L. E.

LET the sloes be put into water, and set over the fire till they grow soft, with care that they do not burst. Then take the sloes out of the water, press out their pulp, and mix with it thrice its weight of double-refined sugar.

THIS preparation is a gentle astringent, and may be given as such in the dose of two or three drams. The degree of its astringency will vary according to the maturity of the sloes, and the length of time that the conserve has been kept.

S E T. II.

P R E S E R V E S.

PRESERVES are made, by steeping or boiling recent simples, first in water, and then in syrup or solution of sugar. The subject is afterwards either kept moist in the syrup; or taken out and dried, that the sugar may candy upon it: this last is the most usual method.

IN this process, some of the valuable parts of the subject are extracted by the liquor, and consequently lost to the preparation; greater regard being here had to palatableness than medicinal efficacy. And indeed most of the preparations of this kind are considered rather as sweetmeats than as medicines;

dicines; as the business of the confectioner rather than of the apothecary. It would be needless therefore to mention the doses of the several articles, or give particular remarks on the manner of preparing them.

RADIX ERYNGII CONDITA.

Candied eringo roots.

Lond.

Boil them in water till the rind will easily peel off; when peeled, slit them through the middle, take out the pith, and wash them three or four times in cold water. For every pound of the roots, so prepared, take two pounds of double-refined sugar, which is to be dissolved in a proper quantity of water, and set over the fire. As soon as the liquor begins to boil put in the roots, and continue the boiling till they are soft.

After this manner are candied
ANGELICÆ CAULES.

Angelica stalks.

CORTEX AURANTIORUM CONDITUS.

Candied orange-peel.

Lond.

Steep the fresh peels of Seville oranges in water, which is to be frequently renewed, until they lose their bitterness. Then having dissolved in water a suitable quantity of double-refined sugar, boil the peels in this liquor till they become soft and transparent

After the same manner are candied
LIMONUM CORTICES.

Lemon-peels. L.

In the same, or a similar manner, may likewise be candied

RADICES ANGELICÆ.

Angelica roots. E. +

RADICES HELENII.

Elecampane roots. E. +

ALL sorts of fruits, flowers, and seeds, may also be preserved, either by keeping them in syrup, or crusting them over with sugar; but these kinds of preparations scarce belong to the art of Pharmacy.

Nutmegs and ginger are brought to us ready candied from the East Indies. *E. +*

MARS SACCHARATUS.

Candied steel.

Edinb. +

Put any quantity of clean filings of iron into a brass-kettle, suspended over a very gentle fire. Add to them, by little and little, twice their weight of white sugar, boiled to the consistence of candy, with which powdered starch has been previously mixed in the proportion of a dram to every pound; agitating the kettle continually, that the filings may be crusted over with the sugar, and taking great care to prevent their running into lumps.

THIS is a very agreeable preparation of steel; but has hitherto been made only by the confectioners. The College of Edinburgh received it in the former editions; but, as there described, it was almost impossible to hinder the matter from concreting into lumps. They have now discovered the intermedium which prevents that inconvenience, and which the confectioners have kept a secret; the addition of a little starch to the sugar. The preparation may be given to the quantity of half a dram, in those cases wherein chalybeate medicines are proper. See page 142.

SECT.

S E C T. III.

JELLIES.

VEGETABLE jellies are composed of the juices of fruits and sugar, boiled to a thick consistence. Independently of the admixture of sugar, the boiling appears to occasion some alteration in the quality of the juices themselves. The recent juices of the summer-fruits are prone to fermentation: after they have been boiled, they are less disposed to ferment, and at the same time they are much less liable to produce, in the human body, flatulencies, gripes, or fluxes; though they still retain, in no small degree, their original antiseptic, anti-inflammatory, and aperient or restringent virtues.

GELATINA, seu miva
CYDONIORUM.

Jelly, or marmalade of quinces.

Edinb. +

Take three pints of depurated quince juice, and a pound of white sugar. Simmer them together to a proper thickness.

THIS is an useful, cooling, restringent medicine: it is given in weakness of the stomach, retchings to vomit, diarrhoeas, and dysenteries, proceeding from a hot indispotion, or sharp bilious humours. It is best taken in little quantities, as a tea spoonful or two now and then, either by itself or diluted with any suitable liquors.

GELATINA BERBERORUM.

Jelly of barberries.

Edinb. +

Take a pound of barberries, picked clean from the stalks, and the same quantity of white sugar. Boil them with a gentle heat to a due consistence; then pass the jelly through a flannel cloth.

GELATINA RIBESIORUM.

Jelly of currants.

Edinb. +

Is prepared after the same manner.

HERE the trouble of expression is saved, these soft fruits freely giving out their juice, which incorporates with the sugar in the process. Both these preparations are gratefully sub-acid and cooling; and in this intention are occasionally made use of for moistening the mouth and fauces in febrile or inflammatory distempers. Dissolved in water they afford an useful diluent drink. By the same qualities, they prove serviceable likewise in chronical disorders proceeding from obstructions of the viscera, or accompanied with immoderate heat: in bilious fluxes and putrid scurvies, their liberal and continued use has sometimes had good effects. Boerhaave greatly commends these kinds of preparations in the scorbutic disorders to which seafaring people are particularly subject.

SECT.

S E C T. IV.

S Y R U P S.

SYRUPS are saturated solutions of sugar, made in water, or watery or vinous infusions, or in juices. They were formerly considered as medicines of much greater importance than they are thought to be at present. Syrups and distilled waters were for some ages made use of as the great alteratives; inso-much that the evacuation of any peccant humour was never attempted, till by a due course of these it had first been regularly prepared for expulsion. Hence arose the exuberant collection of both, which we meet with in pharmacopœias, and like errors have prevailed in each. As multitudes of distilled waters have been compounded from materials unfit to give any virtue over

the helm; so numbers of syrups have been prepared from ingredients, which in this form cannot be taken in sufficient doses to exert their virtues; for two thirds of a syrup consist of sugar, and greatest part of the remaining third is an aqueous fluid.

Syrups are at present chiefly regarded as convenient vehicles for medicines of greater efficacy; and made use of for sweetening draughts and juleps, for reducing the lighter powders into boluses, pills, or electuaries, and other like purposes. Some likewise may not improperly be considered as medicines themselves; as those of saffron, buckthorn berries, and some others.

General Rules for preparing SYRUPS.

I.

ALL the rules laid down for making decoctions are likewise to be observed in the decoctions for syrups. Vegetables, both for decoctions and infusions, ought to be dry, unless they are expressly ordered otherwise. E. +

II.

In both the London and Edinburgh Pharmacopœia, only the purest or double-refined sugar is allowed.

In the syrups prepared by boiling, it has been customary to perform the clarification with whites of eggs after the sugar had been dissolved into the decoction of the vegetable. This method is apparently injurious to the preparation; since not only the impurities of the

sugar are thus discharged; but a considerable part likewise of the medicinal matter, which the water had before taken up from the ingredients, is separated along with them. Nor indeed is the clarification and despumation of the sugar, by itself, very adviseable; for its purification by this process is not so perfect as might be expected: after it has undergone this process, the refiners still separate from it a quantity of oily matter, which is disagreeable to weak stomachs. See page 220. It appears therefore most eligible to employ fine sugar for all the syrups; even the purgative ones (which have been usually made with coarse sugar, as somewhat coinciding with their intention) not excepted; for, as purgative medicines are in general

ungrateful to the stomach, it is certainly improper to employ an addition which increases their offensiveness.

III.

Where the weight of the sugar is not expressed, twenty-nine ounces thereof are to be taken to every pint of liquor. The sugar is to be reduced into powder, and dissolved in the liquor by the heat of a water-bath, unless ordered otherwise. *L.*

Although in the formula of several of the syrups, a double weight of sugar to that of the liquor is directed, yet less will generally be sufficient. First therefore dissolve in the liquor an equal weight of sugar, then gradually add some more in powder, till a little remains undissolved at the bottom, which is to be afterwards incorporated by setting the syrup in a water-bath. *E. +*

The quantity of sugar should be so much, as the liquor is capable of keeping dissolved in the cold: if there is more, a part of it will separate, and concrete into crystals, or candy; if less, the syrup will be subject to ferment, especially in warm weather, and change into a vinous, or sour liquor. If in crystallising, only the superfluous sugar separated, it would be of no inconvenience; but when part of the sugar has candied, the remaining syrup is found to have an under proportion, and is as subject to fermentation as if it had wanted sugar at first.

IV.

Copper-vessels, unless they are well tinned, should not be employed in the making of acid syrups, or such as are composed of the juices of fruits. *E. +*

The confectioners, who are the most dexterous people at these kinds of preparations, to avoid the ex-

pence of frequently new-tinning their vessels, rarely make use of any other than copper ones untinned, in the preparation even of the most acid syrups, as of oranges and lemons. Nevertheless, by taking due care, that their coppers be well scoured and perfectly clean, and that the syrup remain no longer in them than is absolutely necessary, they avoid giving it any ill taste or quality from the metal. This practice, however, is by no means to be recommended to the apothecary.

V.

The syrup, when made, is to be set by till next day; if any saccharine crust appears upon the surface, take it off. *L.*

SYRUPUS ex ALLIO.

Syrup of garlic.

Lond.

Take of

Garlic, sliced, one pound;

Boiling water, two pints.

Macerate them in a close vessel for twelve hours; then strain off the liquor, and dissolve in it a proper quantity of sugar, so as to make a syrup.

This syrup is occasionally made use of for promoting expectoration in humoral asthmas and oppressions of the breast; in these cases, it proves a medicine of considerable efficacy, though a very unpleasant one: it tastes and smells strongly of the garlick. The College have received it as an alternative to the *oxymel ex allio*, for the use of those with whom honey disagrees.

SYRUPUS ex ALTHÆA.

Syrup of marshmallows.

Lond.

Take of

Marshmallow roots, fresh, one pound;

Double.

Double - refined sugar, four pounds;

Water, one gallon.

Boil the water with the roots, to one half: when grown thoroughly cold, pour off and press out the decoction, and set it by for a night to settle: next morning pour off the clear liquor, and adding to it the sugar, boil the whole to the weight of six pounds.

Edinb.

Take of

Marshmallow roots, somewhat dried, nine ounces;

Water, ten pounds;

Purest sugar, four pounds.

Boil the water with the roots to the consumption of one half, and strain the liquor, strongly expressing it. Suffer the strained liquor to rest till the feces have subsided; and when it is free of the dregs, add the sugar; then boil so as to make a syrup.

THE syrup of marshmallows seems to have been a sort of favourite among dispensatory writers, who have taken great pains to alter and amend it, but have been wonderfully tender in retrenching any of its articles. In the last prescription, it is lopt of its superfluities, without any injury to its virtues. It is used chiefly in nephritic cases, for sweetening emollient decoctions, and the like: of itself it can do little service, notwithstanding the high opinion which some have entertained of it; for what can be expected from two or three spoonfuls of the syrup, when the decoction, from which two or three pounds are made, may be taken at a draught or two? 'It is sometimes useful in tickling coughs, by inviscating irritating matter distilling in the fauces: in this way it

may supply the place of the pectoral syrup.'

SYRUPUS e CORTICIBUS AURANTIORUM.

Syrup of orange-peel.

Lond.

Take of the

Yellow rind of Seville orange-peel, fresh, eight ounces;

Boiling water, five pints.

Macerate them for a night in a close vessel; next morning strain out the liquor, and dissolve in it the proper quantity of sugar for making it into a syrup.

Edinb.

Take of the

Yellow rind of Seville orange-peel, fresh, six ounces;

Boiling water, three pounds.

Infuse them for a night in a close vessel; then strain the liquor; let it stand to settle; and having poured it off clear from the sediment, dissolve therein four pounds and a quarter of white sugar, so as to make it into a syrup with a gentle heat.

IN making this syrup, it is particularly necessary that the sugar be previously powdered, and dissolved in the infusion with as gentle a heat as possible, to prevent the exhalation of the volatile parts of the peel. With these cautions, the syrup proves a very elegant and agreeable one, possessing great share of the fine flavour of the orange-peel.

SYRUPUS BALSAMICUS.

Balsamic syrup.

Lond.

Take of

Balsam of Tolu, eight ounces;

Water, three pints.

Boil them for two or three hours in a circulatory vessel, or at least in

a long-necked matrafs, having its mouth lightly covered. When grown cold, strain out the liquor, and mix therewith a proper quantity of sugar to make it into a syrup.

THE coction may be conveniently performed in a retort, with a receiver adapted to it, the liquor which comes over being occasionally poured back; or the water may be entirely drawn off, and the sugar dissolved in the distilled liquor.

Edinb.

Take of the

Syrup of sugar, just made, and warm from the fire, two pounds;
Tincture of balsam of Tolu, one ounce.

When the syrup has grown almost cold, stir into it the tincture, by little at a time, agitating them well together, till perfectly united.

THIS method of making the balsamic syrup was dropt in one of the preceding editions of the Edinburgh Pharmacopœia, on a complaint that the spirit spoiled the taste of the syrup; which it did in a great degree when the tincture was drawn with malt spirits, the nauseous oil which all the common malt spirits are accompanied with communicating that quality; and this was particularly the case when the spirituous part was evaporated from the syrup, as was directed in the former edition of the Edinburgh Pharmacopœia. Particular care therefore should be taken, that the spirit, employed for making the tincture, be perfectly clean, and well rectified from all ill flavour.

The intention of the contrivers of the two foregoing processes seems to have been somewhat different. In the first, the more subtle and fragrant parts of the balsam are ex-

tracted from the grosser resinous matter, and alone retained in the syrup: the other syrup contains the whole substance of the balsam in larger quantity. They are both moderately impregnated with the agreeable flavour of the balsam.

In some pharmacopœias, an elegant syrup of this kind is prepared from a tincture of balsam of Peru, with rose-water and a proper quantity of sugar.

SYRUPUS CARYOPHYLLORUM RUBRORUM.

*Syrup of clove-gillyflowers.
Lond.*

Take of

Clove-gillyflowers, fresh gathered and freed from the heels, three pounds;

Boiling-water, five pints.

Macerate them for a night in a glass or glazed-earthen vessel; then strain off the liquor, and dissolve therein its due proportion of sugar to make it into a syrup.

SYRUPUS CARYOPHYLLORUM.

Edinb.

Take of

Clove-gillyflowers, fresh gathered and freed from the heels, one pound;

Purest sugar, seven pounds and a quarter;

Boiling water, four pounds.

Macerate the flowers in the water for a night; then to the strained liquor add the sugar previously beat, and dissolve it by a gentle heat to make the whole into a syrup.

THIS syrup is of an agreeable flavour, and a fine red colour; and for these it is chiefly valued. Some have substituted to it one easily palatable at seasons when the flowers are not to be procured: an ounce

of clove spice is infused for some days in twelve ounces of white wine, the liquor strained, and, with the addition of twenty ounces of sugar, boiled to a proper consistence: a little cochineal renders the colour of this syrup exactly similar to that prepared from the clove-gillyflower; and its flavour is of the same kind, though not so pleasant. The abuse may be readily detected by adding to a little of the syrup some alkaline salt or ley; which will change the genuine syrup to a green colour; but in the counterfeit, it will make no such alteration, only varying the shade of the red.

SYRUPUS CROCI.

Syrup of saffron.

Lond.

Take of

Saffron wine, one pint;

Double-refined sugar, twenty-five ounces.

Dissolve the sugar in the wine, so as to make a syrup thereof.

SAFFRON is very well fitted for making a syrup, as in this form a sufficient dose of it is contained in a reasonable compass. This syrup is at present more frequently prescribed than the wine from which it is made: it is a pleasant cordial, and gives a fine colour to juleps.

SYRUPUS CYDONIORUM.

Syrup of quinces.

Lond.

Take of

Quince juice, depurated, three pints;

Cinnamon, one dram;

Cloves,

Ginger, each half a dram;

Red Port wine, one pint;

Double - refined sugar, nine pounds.

Digest the juice with the spices, in

the heat of ashes, for six hours; then adding the wine, pass the liquor through a strainer; and afterwards dissolve in it the sugar, so as to make a syrup.

If the quinces are kept for some time, in an airy place, before the juice is pressed out, the syrup proves rather more elegant, and richer of the fruit, than when they are taken fresh from the tree. In either case, the preparation is a very agreeable, mild, cordial restraining; and in some kinds of loosenesses and disorders of the stomach, may be either taken by itself, in the quantity of a spoonful or two at a time, or employed for reconciling to the palate and stomach, medicines of the more ungrateful kind.

SYRUPUS KERMESINUS.

Syrup of kermes.

Edinb. +

This syrup is brought to us ready made, from the southern parts of France.

THE syrup of kermes is of an agreeable taste, and a fine red colour. It is accounted cordial and corroborant, and supposed to be particularly serviceable in weaknesses and other disorders of pregnant women.

SYRUPUS e SUCCO LIMONUM.

Syrup of lemon-juice.

Lond. Edinb.

Take of

Juice of lemons, suffered to stand till the feces have subsided, and afterwards strained, two pints; ('two pounds and a half, *Edin.*')

Double - refined sugar, fifty ounces.

Dissolve the sugar in the juice, so as to make a syrup thereof.

Z 3

After

After the same manner are prepared

**SYRUPUS e SUCCO
MORORUM.**

Syrup of mulberries [L.]

**SYRUPUS e SUCCO FRUCTUS
RUBI IDÆI.**

Syrup of raspberries [L.]

ALL these are very pleasant, cooling syrups; and in this intention are occasionally made use of in draughts and juleps, for quenching thirst, abating heat, &c. in bilious or inflammatory distempers. They are sometimes likewise employed in gargarisms for inflammations of the mouth and tonsils.

**SYRUPUS e MECONIO, five
DIACODION.**

*Syrup of meconium, or diacodium.
Lond.*

Take of

White poppy heads, dried and cleared from the seeds, three pounds and a half;

Water, six gallons.

Cut the heads and boil them in the water, stirring them now and then to prevent their burning, till only about one-third of the liquor remains, which will be almost entirely soaked up by the poppies. Then remove the vessel from the fire, strongly press out the decoction, and boil it down to about four pints: strain it whilst hot, first through a sieve, and afterwards through a fine woollen cloth; and set it by for a night, that the feces may subside. Next morning, pour the liquor off clear, and boil it with six pounds of double-refined sugar, until the weight of the whole is nine pounds, or a little more, that it may become a syrup of a proper consistence.

**SYRUPUS PAPAVERIS
ALBI, seu de MECONIO,
vulgo DIACODION.**

*Syrup of white poppies, or of meconium, commonly called diacodium.
Edinb.*

Take of

White poppy heads, dried, and freed from the seeds, two pounds;

Boiling water, thirty pounds;

Purest sugar, four pounds.

Macerate the bruised heads in the water for a night; next boil till only one-third part of the liquor remains; then strain it, expressing it strongly. Boil the strained liquor to the consumption of one half, and strain again; lastly, add the sugar, and boil to a syrup.

It may also be made by dissolving in two pounds and a half of simple syrup, one dram of the extract of white poppies.

THIS syrup, impregnated with the opiate matter of the poppy heads, is given to children in doses of two or three drams; to adults, from half an ounce to an ounce and upwards, for easing pain, procuring rest, and answering the other intentions of mild opiates. Particular care is requisite, in its preparation, that it may be always made, as nearly as possible, of the same strength; and accordingly the colleges have been very minute in their description of the process.

**SYRUPUS PAPAVERIS
ERRATICI.**

*Syrup of wild poppies.
Lond.*

Take of

Wild poppy flowers, fresh, four pounds;

Boiling water, four pints and a half.

Pour the water on the poppies, set them

them over the fire, and frequently stir them, until the flowers are thoroughly moistened: as soon as they have sunk under the water, let the whole be set by to steep for a night; next day pour off, and press out the liquor, and set it by for a night longer to settle: afterwards add the proper quantity of double-refined sugar to make it into a syrup.

THE design of setting the flowers over the fire is (as Dr Pemberton observes), that they may be a little scalded, so as to shrink enough to be all immersed in the water; without this artifice, they can scarce be all got in: but they are no longer to be continued over the fire, than till this effect is produced, lest the liquor become too thick, and the syrup rendered ropy.

This syrup has been recommended in disorders of the breast, coughs, spitting of blood, pleurifies, and other diseases, both as an emollient and as an opiate. It is one of the lightest of the opiate medicines; and in this respect so weak, that some have doubted of its having any anodyne quality. 'We indeed presume, that it might be very safely superseded altogether.'

SYRUPUS PECTORALIS.

Pectoral syrup.

Lond.

Take of

English maidenhair, dried, five ounces;

Liquorice, four ounces;

Boiling water, five pints.

Macerate them for some hours; then strain out the liquor, and, with a proper quantity of double-refined sugar, make it into a syrup.

THE title of this composition expresses its medical intention: it is supposed to soften acrimonious hu-

mours, allay tickling coughs, and promote the expectoration of tough phlegm. The true maidenhair is the only sort that has been usually directed in these kind of compositions: the use of the English is here very judiciously allowed; not only as being more easily procurable, and having been substituted to the other in the shops, but likewise as there does not seem to be any medicinal difference betwixt them. Fuller finds great fault with both these ingredients, on a supposition that all their virtues fly away in drying; but in this he was certainly mistaken: for the virtues of both these maiden-hairs consist in a mucilaginous substance, which suffers no injury by being dried. There is one species indeed, the Canada maidenhair, which has a considerable share of a pleasant smell and flavour joined to its mucilage; but this is as yet little known in the shops, though not uncommon in some of our gardens. 'This preparation may be superseded by the *Syrupus ex Althæa*.'

SYRUPUS e FLORIBUS PARALYSIS.

Syrup of cowslips.

Lond.

This is made from cowslip flowers after the same manner as the syrup of clove-gillyflowers.

It has been supposed serviceable in nervous disorders: its agreeable flavour recommends it to the patient, though at present there are few who suppose it to possess any singular virtues.

SYRUPUS ROSARUM SOLUTIVUS.

Solutive syrup of roses.

Lond.

Take the liquor that remains after the distillation of six pounds of damask roses;

Z 4

OF

Of double - refined sugar, five pounds.

Having pressed out the liquor from the roses, boil it down to three pints, and set it by for a night to settle: next morning, pour it off clear from the sediment; and adding the sugar, boil the mixture to the weight of seven pounds and a half.

SYRUPUS ROSARUM PALLIDARUM.

*Syrup of pale roses.
Edinb.*

Take of

Pale roses, fresh gathered, one pound;

Boiling water, four pounds;

White sugar, three pounds.

Macerate the roses in the water for a night; then to the liquor strained, and freed from the dregs, add the sugar, boil them into a syrup.

This syrup may likewise be made from the liquor remaining after the distillation of rose water, depurated from its feces.

THE liquor remaining after the distillation of roses (provided the still has been perfectly clean), is as proper for making this syrup as a fresh infusion; for the distillation only collects those volatile parts which are dissipated in the air whilst the infusion is boiling to its consistence.

This syrup is an agreeable and mild purgative for children, in the dose of half a spoonful, or a spoonful. It likewise proves gently laxative to adults; and in this intention may be of service in colic habits. Its principal use is in solutive glysters.

SYRUPUS de ROSIS SICCIS.

*Syrup of dry roses.
Edinb.*

Take of

Red roses dried, seven ounces;

White sugar, six pounds;

Boiling water, five pounds.

Infuse the roses in the water for a night, then boil them a little, strain out the liquor, and adding to it the sugar, boil them to the consistence of a syrup.

THIS syrup is supposed to be mildly astringent: but is principally valued on account of its red colour. The London College have omitted it, having retained others at least equal to it in that respect.

SYRUPUS SCILLITICUS.

*Syrup of squills.
Lond.*

Take of

Vinegar of squills, a pint and a half;

Cinnamon,

Ginger, each one ounce;

Double - refined sugar, three pounds and a half.

Steep the spices in the vinegar for three days; then strain out the liquor, and add the sugar, so as to make a syrup thereof.

Edinb.

Take of

Vinegar of squills, two pounds;

White sugar, three pounds and a half.

Make them into a syrup with a gentle heat.

THE spices, in the first of these compositions, somewhat alleviate the offensiveness of the squills, though not so much as to prevent the medicine from being disagreeable. It is used chiefly, in doses of a spoonful or two, for promoting expectoration, which it does very powerfully.

SYRU-

SYRUPUS de SENNA et RHEO.

Syrup of senna and rhubarb.
Edinb. +

Take of

Senna, two ounces;
Rhubarb, sliced, one ounce;
Ginger, bruised, two drams;
White sugar, three pounds and a half;

Currant-raifins, two ounces;
Water, four pints.

Boil the water with the currants to the consumption of one-fourth; and in the hot decoction infuse for a night the senna, rhubarb, and ginger. The liquor being then strained out, suffered to settle, and poured off clear from the sediment, boil it with the sugar, over a gentle fire, to the consistence of a syrup.

THIS syrup is designed chiefly as a purgative for children; but is not a very agreeable one, nor among us often made use of. The former London Pharmacopœia had a medicine of this kind, with some superfluous articles, which the committee, in their revival of it, retrenched: they likewise omitted the senna, as being at best unnecessary, and retained only rhubarb for the purgative ingredient: the composition was, nevertheless, at length entirely expunged, and very justly; for, as they observe, rhubarb is easily given to young children in powder or infusion, and the taste of it cannot be rendered agreeable to them by any sweetening.

SYRUPUS SIMPLEX.

The simple syrup.

Lond.

Dissolve in water so much double-refined sugar as will make it into a syrup.

SYRUPUS SIMPLEX, five COMMUNIS.

Simple or common syrup.
Edinb.

Take of

Purest sugar, fifteen parts;
Water, eight parts.

Let the sugar be dissolved by a gentle heat.

THESE preparations are plain liquid sweets, void of flavour or colour. They are convenient for sundry purposes where these qualities are not wanted, or would be exceptionable.

SYRUPUS e SPINA CERVINA.

Syrup of buckthorn.
Lond.

Take of the

Juice of ripe and fresh buckthorn berries, one gallon;

Cinnamon,

Ginger,

Nutmegs, each one ounce;

Double-refined sugar, seven pounds.

Set the juice by for some days, to settle; then pass it through a strainer, and in some part thereof macerate the spices. Boil the rest of the juice, adding towards the end that part in which the spices were macerated, first passed through a strainer: this part of the process must be so managed, that the whole liquor may be reduced to four pints. Lastly, put in the sugar, and make the mixture into a syrup.

Edinb.

Take of the

Juice of ripe buckthorn berries, depurated, seven pounds and a half;

White sugar, three pounds and a half.

Boil

Boil them to the consistence of a syrup.'

BOTH these preparations, in doses of three or four spoonfuls, operate as brisk cathartics. The principal inconveniences attending them are, their being very unpleasant, and their occasioning a thirst and dryness of the mouth and fauces, and sometimes violent gripes: both these may be prevented, by drinking liberally of water-gruel, or other warm liquids, during the operation. The ungratefulness of the buckthorn is endeavoured to be remedied in the first of the above prescriptions, by the addition of aromatics, which however are scarcely sufficient for that purpose. The second also had formerly an aromatic material for the same intention, a dram of the essential oil of cloves; which being found ineffectual, is now rejected.

SYRUPUS VIOLARUM.

Syrup of violets.

Lond.

Take of

Violets, fresh and well coloured, two pounds;

Boiling water, five pints.

Macerate them for a whole day in a glass, or at least a glazed earthen vessel; then pour out the liquor, and pass it through a thin linen cloth, carefully avoiding even the lightest pressure; afterwards adding the due proportion of sugar, make it into a syrup.

Edinb.

Take of

Fresh violets, one pound;

Boiling water, four pounds;

Purest sugar, seven pounds and a half.

Macerate the violets in the water for twenty-four hours in a glass, or at least a glazed earthen vessel,

close covered; then strain without expression, and to the strained liquor add the sugar, beat, and make into a syrup.'

THIS syrup is of a very agreeable flavour; and in the quantity of a spoonful or two, proves to children gently laxative. It is apt to lose, in keeping, the elegant blue colour, for which it is chiefly valued; and hence some have been induced to counterfeit it with materials whose colour is more permanent. This abuse may be readily discovered, by adding to a little of the suspected syrup any acid or alkaline liquor. If the syrup is genuine, the acid will change its blue colour to a red, and the alkali will change it to a green; but if counterfeit, these changes will not happen. It is obvious, from this mutability of the colour of the violet, that the prescriber would be deceived if he should expect to give any blue tinge to acidulated or alkalized juleps or mixtures, by the addition of the blue syrup.

SYRUPUS ZINGIBERIS.

Syrup of ginger.

Lond.

Take of

Ginger, cut into thin slices, four ounces;

Boiling water, three pints.

Macerate them for some hours; then strain out the liquor, and make it into a syrup with a proper quantity of double-refined sugar.

Edinb.

Take of

Beat ginger, three ounces;

Boiling water, four pounds;

Purest sugar, seven pounds and a half.

Macerate the ginger in the water in a close vessel, for twenty-four hours; then to the liquor strained, and freed

freed from the feces, add the beat sugar, and make them into a syrup.'

THESE are agreeable and moderately aromatic syrups, lightly impregnated with the flavour and virtues of the ginger.

CONFECTIO ALKERMES.

Confection of kermes.

Lond.

Take of

Juice of kermes grains, warmed and strained, three pounds;

Damask rose water, six ounces by measure;

Oil of cinnamon, half a scruple;

Double-refined sugar, one pound.

Dissolve the sugar in the rose water, by the heat of a water-bath, into a syrup; then mix in the juice of kermes, and after it has grown cold, the oil of cinnamon.

Edinb. +

Take of

Syrup of kermes, three pounds;

Yellow Saunders,

Cinnamon, each six drams;

Cochineal, three drams;

Saffron, one dram and a half.

Evaporate the syrup, with a gentle heat, to the consistence of honey; then mix with it the other ingredients reduced to a very fine powder.

BOTH these compositions are agreeable cordials; the dose, when taken by themselves, is from a scruple to a dram or more. The first has an advantage of mixing uniformly in juleps without spoiling their transparency, which the powders in the second always do. Particular care ought to be had in the choice of the essential oil, which for the most part is grievously adulterated; it would be convenient to grind the oil with

a little of the sugar before it is added to the other ingredients; for by this means, it will mix more perfectly, and not be apt to separate in keeping. 'The kermes are seldom used in modern practice.'

SYRUPUS ACETI.

Syrup of vinegar.

Edinb.

'Take of

Vinegar, two pounds and a half;

Purest sugar, three pounds and a half.

Boil so as to make a syrup.

THIS is a very pleasant syrup; and may be used to acidulate the common drink in fevers, both as a cooler and antiseptic medicine: for these intentions it may be used as a convenient succedaneum to the syrup of lemon-juice, and other more costly preparations.'

SYRUPUS COLCHICI.

Syrup of colchicum.

Edinb.

'Take of

Colchicum root, fresh and succulent, cut into small pieces, one ounce;

Vinegar, sixteen ounces;

Purest sugar, twenty-six ounces.

Macerate the root in the vinegar two days, now and then shaking the vessel; then strain it with a gentle pressure. To the strained liquor add the sugar, and boil a little, so as to form a syrup.

THIS syrup seems to be the best preparation of the colchicum; great care is required to take up this root in the proper season: and from errors of this kind we are to ascribe the uncertainty in the effects of this medicine as found in the shops. For its nature and medicinal qualities, see COLCHICUM.'

SECT.

S E C T. V.

HONEYS and OXYMELS.

THE more fixt parts of vegetables, dissolved in watery liquors, may be thence transferred into honey, by mixing the honey with the watery decoction or juice of the plant, and boiling them together till the aqueous part has exhaled and the honey remains of its original consistence. 'Honey has not probably any advantage whatever over sugar; and it is liable to many inconveniences which sugar is free from: in particular, it is much more liable to run into fermentation, and in many constitutions produces gripes, and often violent effects: The Edinburgh College have therefore rejected the whole of the oxymels in their last edition of the Pharmacopœia.'

MEL ELATINES.

Honey of fluellin.
Lond.

Take of

Depurated juice of fluellin, four pints;

Clarified honey, four pounds.

Boil them to a due consistence.

THIS preparation made its first appearance in the preceding edition of our Pharmacopœia. It is very rarely made use of, and not often kept in the shops.

MEL HELLEBORATUM.

Honey of Hellebore.
Lond.

Take of

White hellebore roots, dried, and cut in slices, one pound;

Clarified honey, three pounds;

Water, four pints.

Let the roots be macerated in the water for three days, and then

boiled a little; press out the liquor; and having passed it again through a strainer, boil it with the honey to a proper thickness.

PARTICULAR care ought to be had to reduce this preparation as nearly as possible to the honey consistence, that its strength may not be too uncertain. It acts, as a drastic purgative or emetic, too violent and precarious for common use. It has been sometimes given in maniacal cases, in doses of one or two drams and upwards; though more frequently employed in glysters. The present practice very rarely makes use of it at all.

MEL ROSACEUM.

Honey of roses.
Lond.

Take of

Red rose buds, freed from the heels, and hastily dried, four ounces;

Boiling water, three pints;

Clarified honey, five pounds.

Steep the roses in the water for some hours; then strain off the liquor, mix it with the honey, and boil them to a due consistence.

Edinb. +

Take of

Red roses, dried, half a pound;

Boiling water, four pints;

Clarified honey, six pounds.

Steep the roses in the water for a night; then strain out the liquor, add it to the honey, and boil the mixture to the consistence of honey.

THIS

THIS preparation is not unfrequently made use of as a mild cooling detergent, particularly in gargarisms for ulcerations and inflammation of the mouth and tonsils. The design of hastily drying the roses, as directed in the first of the above prescriptions, is, that they may the better preserve their astringency.

MEL SOLUTIVUM.

Solutive honey.

Lond.

Take of

The liquor remaining after the distillation of six pounds of damask roses;

Cummin seeds, bruised a little, one ounce;

Brown sugar, four pounds;

Honey, two pounds.

Having pressed out the liquor, boil it to three pints; adding, toward the end, the seeds tied up in a linen cloth. Then put in the sugar and honey, and boil down the mixture to the consistence of thin honey.

THIS composition is contrived for the purpose expressed in its title. It is principally employed in laxative glysters; and hence brown sugar is here allowed, whilst for all other uses the double-refined is directed.

OXYMEL ex ALLIO.

Oxymel of garlick.

Lond.

Take of

Garlick, cut in slices, an ounce and a half;

Caraway seeds,

Sweet fennel seeds, each two drams;

Clarified honey, ten ounces by weight;

Vinegar, half a pint.

Boil the vinegar, for a little time with the seeds bruised, in a glazed earthen vessel; then add the garlick, and cover the vessel close; when grown cold, press out the liquor, and dissolve in it the honey by the heat of a water-bath.

THIS oxymel is recommended for attenuating viscid juices, promoting expectoration, and the fluid secretions in general. It is doubtless a medicine of considerable efficacy, though very unpleasant, the flavour of the garlick prevailing, notwithstanding the addition of the aromatic seeds.

OXYMEL PECTORALE.

Pectoral oxymel.

Edinb. +

Take of

Elecampane roots, one ounce;

Florence orris roots, half an ounce;

Gum ammoniacum, one ounce;

Vinegar, half a pint;

Clarified honey, one pound;

Water, three pints.

Let the roots, cut and bruised, be boiled in the water till one-third is wasted; then strain off the liquor; let it stand to settle; and having poured it off clear from the feces, add to it the honey, and the ammoniacum, previously dissolved in the vinegar. Mix them together, by boiling them a little.

THE title of this composition expresses its medical virtues. It is designed for those disorders of the breast that proceed from a load of viscid phlegm, and obstructions of the pulmonary vessels. Two or three spoonfuls may be taken every night and morning, and continued for some time.

OXYMEL

OXYMEL SCILLITICUM.*Oxymel of squills.**Lond.*

Take of

Clarified honey, three pounds;

Vinegar of squills, two pints;

Boil them in a glazed earthen vessel, over a gentle fire, to the consistence of a syrup.

Edinb. +

Take of

Clarified honey, four pounds;

Vinegar of squills, two pints.

Boil them to the consistence of a syrup.

THE honey was formerly employed for this preparation unclarified; and the scum, which in such cases arises in the boiling, taken off: by this means the impurities of the honey were discharged; but some of the medicinal parts of the squills, which the vinegar was impregnated with, were also separated. For this reason the Colleges both of London and Edinburgh have now judiciously ordered the honey for all these kinds of preparations to be previously clarified by itself.

Oxymel of squills is an useful aperient, detergent, and expectorant,

and of great service in humoral asthmas, coughs, and other disorders where thick phlegm abounds. It is given in doses of two or three drams, along with some aromatic water, as that of cinnamon, to prevent the great nausea which it would otherwise be apt to excite. In large doses, it proves emetic.

OXYMEL SIMPLEX.*Simple oxymel.**[L. E.] +*

Take of

Clarified honey, two pounds;

Vinegar, one pint.

Boil them to a due consistence.

THIS simple preparation is not inferior in efficacy to many more elaborate compositions. It is an agreeable, mild, cooling medicine. It is often used in cooling, detergent gargarisms, and not unfrequently as an expectorant.

The boiling of oxymels in glazed earthen vessels is not free from danger. Their glazing is procured by a vitrification of lead; and vinegar, by a boiling heat, may corrode so much of vitrified lead, as to receive from it noxious qualities.

C H A P. V.

SEPARATION *and* COLLECTION of *those Parts of* VEGETABLE *and* ANIMAL SUBSTANCES, *which are volatile in the* HEAT of BOILING WATER.

THERE are many vegetable, and some animal substances, whose virtues reside, wholly or in part, in a matter which is capable of totally exhaling in the heat of boiling water. In most of the processes hitherto described, it is endeavoured, as much as possible, to preserve this volatile matter along with the more fixt parts; whether those fixt parts were themselves medicinal, or only subservient to the union of the volatile matter with the

fluids employed. The aim, in the present chapter, is, to completely separate this volatile subtile principle, and collect it pure from the grosser fixt parts, either in a concentrated state, or diluted with water or spirit of wine. In its concentrated state, it appears commonly an oil; which, from its containing always the specific odour, and frequently the other medicinal powers of the subject, is called *Essential Oil*.

S E C T. I.

ESSENTIAL OILS.

ESSENTIAL oils are drawn by distillation in an alembic, with a large refrigeratory. A quantity of water is added to the subject, sufficient to prevent its burning; and in this water, it is likewise macerated a little time before the distillation. The oil comes over along with the water; and either swims on its surface, or sinks to

the bottom, according as it is lighter or heavier than that fluid [L.]

OLEA ESSENTIALIA.

Essential oils.

Edinb.

‘ Of the herbs of garden mint,
Peppermint,
Savin;

OF

Of the tops of rosemary,
 Flowering spikes of lavender,
 Aniseeds,
 Juniper berries,
 Sassafras root,
 Jamaica pepper,

Are prepared almost in the same manner as the simple distilled waters, save that for procuring the oil a somewhat less quantity of water is to be used. Seeds and woody matters are first to be bruised or shaved. The oil arises with the water; and as it is lighter or heavier, swims on the surface, or sinks to the bottom, from which it is afterwards to be separated.

It is, however, to be remarked, that in preparing these distilled waters and oils, so many varieties must necessarily take place from the goodness of the subject itself, its texture, the time of the year, and such like circumstances, that a certain and general rule, which should strictly apply to each example, can scarce be laid down; wherefore we have only explained the general method, leaving many things to be varied by the judgment of the operator. [E.]

ESSENTIAL oils are obtained only from odoriferous substances; but not equally from all of this class, nor in quantity proportionable to their degree of odour; some, which, if we were to reason from analogy, should seem very well fitted for this process, yielding extremely little oil, and others none at all. Roses and camomile flowers, whose strong and lasting smell promises abundance, are found upon experiment to contain but a small quantity: the violet and jessamine flower, which perfume the air with their odour, lose their smell upon the gentlest coccion, and do not afford the least perceptible mark of oil upon being distilled, unless immense quantities are

submitted to the operation at once; whilst favin, whose disagreeable scent extends to no great distance, gives out the most oil of almost any vegetable known.

Nor are the same plants equally fit for this operation, when produced in different soils or seasons, or at different times of their growth. Some yield more oil if gathered when the flowers begin to fall off than at any other time; lavender and rue, for instance. Others, as sage, afford the largest quantity when young, before they have sent forth any flowers; and others, as thyme, when the flowers have just appeared. All fragrant herbs yield a larger proportion of oil when produced in dry soils and warm summers, than in the opposite circumstances. On the other hand, some of the disagreeable strong-scented ones, as wormwood, are said to contain most in rainy seasons and moist rich grounds.

SEVERAL of the chemists have been of opinion, that herbs and flowers, moderately dried, yield a greater quantity of essential oil, than if they were distilled when fresh. It is supposed, that the oil being already blended, in fresh plants, with a watery fluid, great part of it remains diffused through the water after the distillation, divided into particles too minute to unite and be collected; whereas in drying, the oily parts, on the exhalation of the moisture which kept them divided and dispersed, run together into globules, which have little disposition to mingle with watery fluids, and easily separate from the water employed in the distillation.

This theory, however, does not appear to be altogether satisfactory: for though the oil be collected in the subject into distinct globules, it does not rise in that form, but resolved into vapour, and blended and

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coagitated by the heat with the vapour of the water; and if the oil in a dry plant was less disposed to unite with aqueous fluids than in a fresh one, the dry ought to yield a weaker infusion than the fresh; the contrary of which is generally found to obtain. As the oil of the dry plant is most perfectly extracted, and kept dissolved by the water before the distillation, I can see no reason why it should have a greater tendency to separate from the water afterwards.

The opinion of dry plants yielding most oil, seems to have arisen from an observation of Hoffman, which has, I think, been misunderstood: "A pound (he says) of dry spike flowers yields an ounce of oil; but if they were distilled fresh, they would scarcely yield above half an ounce; and the case is the same in balm, sage, &c. The reason is, that in drying, the watery humidity exhales; and as from two pounds of a fresh plant we do not obtain above one pound of dry, and little of the subtile oil evaporates in the drying, it follows, that more oil ought to be afforded by the dry than by the fresh." The meaning of which I apprehend to be no more than this, that if two pounds of a fresh plant are by drying reduced to one, without any loss of the oil, then the one pound dry ought to be equivalent to the two fresh. A late writer quotes an experiment of Neumann, which appears to be misunderstood in the same manner; for Neumann, in the place referred to, says only, that dry wormwood is found to yield much more oil than an *equal weight* of the fresh plant. I do not recollect any instance, in which fresh and dry plants have been brought to a fair comparison, by dividing a quantity of the subject into two equal weights, and distil-

ling one while fresh, and the other after it has been carefully and moderately dried.

But whatever may be the effect of moderate exsiccation, it is certain, that if the drying be long continued, the produce of oil will be diminished, its colour altered, and its smell impaired.

With regard to the proportion of water, if whole plants, moderately dried, are used, or the shavings of woods, as much of either may be put into the vessel, as, lightly pressed, will occupy half its cavity; and as much water may be added, as will rise up to two-thirds its height. The water and ingredients, altogether, should never take up more than three-fourths of the still; there should be liquor enough to prevent any danger of an empyreuma, but not so much as to be too apt to boil over into the receiver.

The maceration should be continued so long, as that the water may fully penetrate the parts of the subject. To promote this effect, woods should be thinly shaved across the grain, or sawed, roots cut transversely into thin slices, barks reduced into coarse powder, and seeds lightly bruised. Very compact and tenacious substances require the maceration to be continued a week or two or longer; for those of a softer and looser texture, two or three days are sufficient; whilst some tender herbs and flowers not only stand not in need of any at all, but are even injured by it.

Whether the addition of sea-salt is of any real service, is greatly to be doubted. The uses generally assigned to it are, to penetrate and unlock the texture of the subject more effectually than simple water could do; and to prevent the fermentation or putrefaction, which

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the matter is apt to run into during the length of time that the maceration is often continued. But sea-salt seems rather to harden and condense, than to soften and resolve, both vegetable and animal subjects; and if it prevents putrefaction, it must, on that very account, be rather injurious than of service. The resolution here aimed at, approaches near to a beginning putrefaction; and saline substances, by retarding this, prolong the maceration far beyond the time that would otherwise be necessary. It is in the power of the operator, when he perceives the process coming near this pitch, to put a stop to it at pleasure, by proceeding immediately to distillation: by this means the whole affair will be finished in a very little time, with at least equal advantage in every other respect; provided the manual operations of pounding, rasping, and the like, which are equally necessary in either case, be scientifically complied with.

Bodies of a very viscous and compact texture, were directed, in the *Edinburgh Pharmacopœia*, to be fermented for some days with a little yeast; half their quantity of water is sufficient for performing the fermentation; so much more as is necessary, is to be added afterwards before the distillation. This process undoubtedly promotes the resolution of the subject, and the extrication of the oil; it rarely happens, however, that assistances of this kind are needful. Particular care must be had not to continue the fermentation too long; or to give a bad flavour to the oil by an ill-chosen ferment, or using too large a quantity of any.

Some chemists pretend, that by the addition of salts and acid spirits, they have been enabled to gain more oil from certain vegetable matters, than could possibly be got from them

without such assistance. Experiments made on purpose to settle this point seem to prove the contrary; this at least is constantly found to be true, that where there is any reason to think the yield to be greater than usual, the quality of the oil is proportionably injured. The quantity of true essential oil in vegetables can by no means be increased; and what is really contained in them may be easily separated without any addition of this kind. All that saline matters can do in this respect, is, to make the water susceptible of a greater degree of heat than it can sustain by itself, and thus enable it to carry up a gross unctuous matter not volatile enough to arise with pure water: this gross matter, mingling with the pure oil, increases the quantity, but at the same time must necessarily debase its quality. And indeed, when water alone is made use of, the oil which comes over about the end of the operation is remarkably less fragrant, and of a thicker consistence, than that which arises at the beginning; distilled a second time, with a gentle heat, it leaves a large quantity of gross almost insipid resinous matter behind.

THE choice of proper instruments is of great consequence to the performance of this process to advantage. There are some oils which pass freely over the swan neck of the head of the common still: others, less volatile, cannot easily be made to rise so high. For obtaining these last; we would recommend a large low head, having a rim or hollow canal round it: in this canal the oil is detained on its first ascent (and thence conveyed at once into the receiver) the advantages of which are sufficiently obvious.

With regard to the fire, the operator ought to be expeditious in raising it at first, and to keep it up during

ring the whole process, of such a degree, that the oil may freely distil; otherwise the oil will be exposed to an unnecessary heat; a circumstance which ought as much as possible to be avoided. Fire communicates to all these oils a disagreeable impression, as is evident from their being much less grateful when newly distilled, than after they have stood for some time in a cool place; the longer the heat is continued, the more alteration it must produce in them.

The greater number of oils require for their distillation the heat of water strongly boiling: but there are many also which rise with a considerably less heat; such as those of lemon-peel, citron-peel, of the flowers of lavender and rosemary, and of almost all the more odoriferous kinds of flowers. We have already observed, that these flowers have their fragrance greatly injured, or even destroyed, by beating or bruising them; it is impaired also by the immersion in water in the present process, and the more so in proportion to the continuance of the immersion and the heat: hence these oils, distilled in the common manner, prove much less agreeable in smell than the subjects themselves. For the distillation of substances of this class, I have contrived another method: instead of being immersed in water, they are exposed only to its vapour. A proper quantity of water being put into the bottom of the still, the odoriferous herbs or flowers are laid lightly in a basket, of such a size that it may enter into the still, and rest against its sides, just above the water. The head being then fitted on, and the water made to boil, the steam, percolating through the subject, imbibes the oil, without impairing its fragrance, and carries it over into the receiver. Oils thus obtained possess the odour

of the subject in an exquisite degree, and have nothing of the disagreeable scent perceivable in those distilled by boiling them in water in the common manner.

It may be proper to observe, that those oils which rise with a less heat than that of boiling water, are generally called, by the chemical and pharmaceutical writers, *light* oils; and those which require the heat of water strongly boiling, are called *ponderous*. I have avoided these expressions, as they might be thought to relate to the comparative *gravities* of the oils; with which the volatility or fixedness have no connection. Oil olive is lighter than most of the essential oils; but the heat requisite to make it distil exceeds that in which the heaviest essential oil distils, considerably more than the heat of boiling water exceeds that of ice.

THE water employed in the distillation of essential oils always imbibes some portion of the oil; as is evident from the smell, taste, and colour which it acquires. It cannot, however, retain above a certain quantity; and therefore, such as has been already used and almost saturated itself, may be advantageously employed, instead of common water, in a second, third, or any future distillation of the same subject.

Some late chemical writers recommend, not the water which comes over, but that which remains in the still, to be used a second time. This can be of no service; as containing only such parts of the vegetable as are not capable of arising in distillation, and which serve only to impede the action of the water as a menstruum, and to endanger an empyreuma.

After the distillation of one oil, particular care should be had to duly cleanse the worm before it is employed

ployed in the distillation of a different plant. Some oils, those of wormwood and aniseeds for instance, adhere to it so tenaciously, as not to be melted out by heat, or washed off by water: the best way of cleansing the worm from these, is to run a little spirit of wine through it.

Essential oils, after they are distilled, should be suffered to stand for some days, in vessels loosely covered with paper, till they have lost their disagreeable fiery odour, and become limpid: then put them up in small bottles, which are to be kept quite full, closely stoppt, in a cool place: with these cautions, they will retain their virtues in perfection for many years.

When carelessly kept, they in time gradually lose of their flavour, and become gross and thick. Some endeavour to recover them again after they have undergone this change, by grinding them with about thrice their weight of common salt, then adding a large proportion of water, and distilling them afresh: the purer part arises thin and limpid, possessing a great degree of the pristine smell and taste of the oil, though inferior in both respects to what the oil was at first. This rectification, as it is called, succeeds equally without the salt: the oils, when thus altered, are nearly in the same state with the turpentine, and other thickened oily juices, which readily yield their purer oil in distillation with water alone.

When essential oils have entirely lost their smell, some recommend adding them in the distillation of a fresh quantity of the oil of the same plant; by which means they are said to satiate themselves anew with the odorous matter, and become entirely renovated. This practice, however, ought doubtless to be dis-

approved, as being no other than a specious sophistication; for it can do no more than to divide, between the old oil and the new, the active matter which belongs to the new alone.

Essential oils, medicinally considered, agree in the general qualities of pungency and heat; in particular virtues, they differ as much as the subjects from which they are obtained, the oil being the direct principle in which the virtues, or part of the virtues, of the several subjects reside. Thus the carminative virtue of the warm seeds, the diuretic of juniper berries, the emmenagogue of savin, the nervine of rosemary, the stomachic of mint, the antiscorbutic of scurvy-grass, the cordial of aromatics, &c. are concentrated in their oils.

There is another remarkable difference in essential oils, the foundation of which is less obvious, that of the degree of their pungency and heat; which are by no means in proportion, as might be expected, to those of the subject they were drawn from. The oil of cinnamon, for instance, is excessively pungent and fiery; in its undiluted state it is almost caustic; whereas cloves, a spice which in substance is far more pungent than the other, yields an oil which is far less so. This difference seems to depend partly upon the quantity of oil afforded, cinnamon yielding much less than cloves, and consequently having its active matter concentrated into a smaller volume; partly, upon a difference in the nature of the active parts themselves: for though essential oils contain always the specific odour and flavour of their subjects, whether grateful or ungrateful, they do not always contain the whole pungency; this resides frequently in a more fixt resinous matter, and does

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not rise with the oil. After the distillation of cloves, pepper, and some other spices, a part of their pungency is found to remain behind: a simple tincture of them in rectified spirit of wine is even more pungent than their pure essential oils.

The more grateful oils are frequently made use of for reconciling to the stomach medicines of themselves disgustful. It has been customary to employ them as correctors for the resinous purgatives; an use which they do not seem to be well adapted to. All the service they can here be of, is, to make the resin sit easier at first on the stomach: far from abating the irritating quality upon which the virulence of its operation depends, these pungent oils superadd a fresh stimulus. See the article CATHARTICS.

Essential oils are never given alone, on account of their extreme heat and pungency; which in some is so great, that a single drop let fall upon the tongue, produces a gangrenous eschar. They are readily imbibed by pure dry sugar, and in this form may be conveniently exhibited. Ground with eight or ten times their weight of the sugar, they become soluble in aqueous liquors, and thus may be diluted to any assigned degree. Mucilages also render them miscible with water into an uniform milky liquor. They dissolve likewise in spirit of wine; the more fragrant in an equal weight, and almost all of them in less than four times their own quantity: these solutions may be either taken on sugar, or mixed with syrups or the like: on mixing them with water, the liquor grows milky, and the oil separates.

The more pungent oils are employed externally against paralytic complaints, numbness, pains and aches, cold tumours, and in other cases where particular parts require

to be heated or stimulated. The tooth-ach is sometimes relieved by a drop of these almost caustic oils, received on cotton, and cautiously introduced into the hollow tooth.

OLEUM ABSINTHII ESSENTIALE.

Essential oil of the leaves of wormwood.

L. E. +

This is one of the more ungrateful oils: it smells strongly of the wormwood, and contains its particular nauseous taste, but has little or nothing of its bitterness, this remaining entire in the decoction left after the distillation: its colour, when drawn from the fresh herb, is a dark green; from the dry, a brownish yellow. This oil is recommended by Hoffman as a mild anodyne, in spasmodic contractions: for this purpose, he directs a dram of it to be dissolved in an ounce of rectified spirit of wine, and seven or eight drops of the mixture taken for a dose in any convenient vehicle. Boerhaave greatly commends in tertian fevers, a medicated liquor composed of about seven grains of the oil ground first with a dram of sugar, then with two drams of the salt of wormwood, and afterwards dissolved in six ounces of the distilled water of the same plant: two hours before the fit is expected, the patient is to bathe his feet and legs in warm water, and then to drink two ounces of the liquor every quarter of an hour till the two hours are expired: by this means, he says, all cases of this kind are generally cured with ease and safety, provided there is no scirrhusity or suppuration. With us, the oil of wormwood is employed chiefly as a vermifuge; and for this purpose is both applied externally to the belly, and taken internally: it is most conveniently exhibited in the form of pills, which it

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may

be reduced into by mixing it with crumb of bread.

OLEUM SEMINUM ANETHI ESSENTIALE.

Essential oil of dill seeds.

Lond.

This is a very warm oil; of a flavour not very agreeable, less so than that of the seeds. It is sometimes given as a carminative, in flatulences, colicky pains, hiccups, and the like, from one to three or four drops.

OLEUM SEMINUM ANISI ESSENTIALE.

Essential oil of aniseeds.

L. E.

This oil possesses the taste and smell of the aniseeds in perfection. It is one of the mildest of the distilled oils: fifteen or twenty drops may be taken at a time without danger, though common practice rarely goes so far as half this number. Its smell is extremely durable and diffusive: milk drawn from the breast after taking it, is found impregnated with its odour; and possibly this may be, in part, the foundation of the pectoral virtues usually ascribed to it; in flatulences and colics, it is said by some to be less effectual than the seeds themselves.

It is remarkable of this oil, that it congeals, even when the air is not sensibly cold, into a butyraceous consistence: and hence, in the distillation of it, the operator ought not to be over-solicitous in keeping the water in the refrigeratory too cool: it behoves him rather to let it grow somewhat hot, particularly towards the end of the process; otherwise the oil, congealing, may so stop up the worm, as to endanger blowing off the head of the still, at least a considerable quantity of oil will remain in it.

OLEUM SEMINUM CARUI ESSENTIALE.

Essential oil of caraway seeds.

L. E. +

The flavour of this exactly resembles that of the caraway. It is a very hot and pungent oil; a single drop is a moderate dose, and five or six is a very large one. It is not unfrequently made use of as a carminative; and supposed by some to be peculiarly serviceable for promoting urine, to which it communicates some degree of its smell.

OLEUM CARYOPHYLLORUM AROMATICORUM ESSENTIALE.

Essential oil of cloves.

L. E. +

This oil is so ponderous as to sink in water, and is not easily elevated in distillation: if the water which comes over be returned on the remaining cloves, and the distillation repeated, some more oil will generally be obtained, though much inferior in quality to the first. The oil of cloves is usually described as being "in taste excessively hot and fiery, and of a gold yellow colour." (*Boerh. process. 27.*) Such indeed is the composition which we receive under this name from Holland; but the genuine oil of cloves is one of the milder oils; it may be taken with great safety (duly diluted) to the quantity of ten or twelve drops or more. Nor is its colour at all yellow, unless it has been long and carelessly kept, or distilled by too violent a fire: when in perfection, it is limpid and colourless, of a pleasant, moderately warm and pungent taste, and a very agreeable smell, much resembling that of the spice itself. The Dutch oil of cloves contains a large quantity of expressed oil, as evidently appears upon examining it by distillation,

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This, however, cannot be the addition to which it owes its acrimony. A small proportion of a resinous extract of cloves communicates to a large one of oil a deep colour, and a great degree of acrimony.

OLEUM FLORUM CHAMÆ- MELI ESSENTIALE.

Essential oil of camomile flowers.
Lond.

This is a very pungent oil, of a strong not ungrateful smell, resembling that of the flowers: its colour is yellow, with a cast of greenish or brown. It is sometimes given in the dose of a few drops, as a carminative, in hysteric disorders, and likewise as a vermifuge: it may be conveniently made into pills with crumb of bread.

The oil above described is that obtained from the common garden camomile, which is the only sort directed in our dispensatories, (see the foregoing Part, page 123.) There is another species, more frequent in corn-fields than in our gardens, (*chamamelum vulgare* Ger. *Raii synopsis* ed. 3. 288.) which yields a beautiful blue oil: this colour, if the oil is carefully kept, remains for many years; but, if the air is not perfectly excluded, soon degenerates into a yellow like that of the foregoing.

OLEUM CINNAMOMI.

Oil of cinnamon.
L. E. +

This valuable oil is extremely hot and pungent, of a most agreeable flavour, like that of the cinnamon itself. In cold languid cases, and debilities of the nervous system, it is one of the most immediate cordials and restoratives. The dose is one, two, or three drops: which must always be carefully diluted by the mediation of sugar, &c.; for

so great is the pungency of this oil, that a single drop let fall upon the tongue, undiluted, produces, as Boerhaave observes, a gangrenous eschar. In the distillation of this oil, a smart fire is required; and the low head, with a channel round it, above recommended for the distillation of the less volatile oils, is particularly necessary for this, which is one of the least volatile, and which is afforded by the spice in exceeding small quantity. The distilled water retains no small portion of the oil; but this oil being very ponderous, great part of it subsides, from the water, on standing for two or three weeks in a cool place.

OLEUM SEMINUM CYMINI ESSENTIALE.

Essential oil of cummin seeds.
Lond.

This is one of the warmer and less pleasant oils. It is employed chiefly in cold, flatulent, hysteric complaints, in doses of two or three drops. It gives its smell strong to the urine, and is supposed peculiarly serviceable for promoting its discharge.

OLEUM SEMINUM FŒNICULI ESSENTIALE.

Essential oil of fennel seeds.
Edinb. +

The oil obtained from sweet fennel seeds is much more elegant and agreeable than that of the common fennel. It is one of the mildest of these preparations; it is nearly of the same degree of warmth with that of aniseeds; to which it is likewise similar in flavour, though far more grateful. It is given from two or three drops to ten or twelve, as a carminative, in cold indispositions of the stomach; and in some

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kinds of coughs, for promoting expectoration.

**OLEUM baccarum JUNIPERI
ESSENTIALE.**

Essential oil of juniper berries.

L. E.

This oil is a very warm and pungent one; of a strong flavour, not unlike that of the berries. In the dose of a drop or two, it proves a serviceable carminative and stomachic: in one of six, eight, or more, a stimulating, detergent, diuretic and emmenagogue: it seems to have somewhat of the nature of the turpentine, or their distilled oil; like which, it communicates a violet smell to the urine.

The oil of these berries resides partly in vesicles spread through the substance of the fruit, and partly in little cells contained in the seeds; when the berry is dry, and the oil hardened into a resinous substance, it becomes visible, upon breaking the seeds, in form of little transparent drops. In order therefore to obtain this oil to advantage, we ought, previous to the distillation, to bruise the berry thoroughly; so as to break the seeds, and entirely lay open the oily receptacles.

**OLEUM florum LAVENDULÆ
ESSENTIALE.**

Essential oil of lavender flowers.

L. E.

This oil, when in perfection, is very limpid, of a pleasant yellowish colour, extremely fragrant, possessing in an eminent degree the peculiar smell generally admired in the flowers. It is a medicine of great use, both externally and internally, in paralytic and lethargic complaints, rheumatic pains, and debilities of the nervous system. The dose is from one drop to five or six.

Lavender flowers yield the most

fragrant oil, and in considerably the largest quantity, when they are ready to fall off spontaneously, and the leaves begin to shew themselves: the seeds give out extremely little. The flowers may be separated from the rest of the plant, by drying it a little, and then gently beating it: they should be immediately committed to distillation, and the process conducted with a well regulated gentle heat; too great heat would not only change the colour of the oil, but likewise make a disagreeable alteration in its smell.

ESSENTIA LIMONUM

[L.]

OLEUM corticum LIMONUM

[E.] +

Essence of lemons; or the essential oil of lemon-peel.

THIS is a pleasant oil, of a fine smell, very near as agreeable as that of the fresh peel; it is one of the lightest and most volatile essential oils we have, perfectly limpid, and almost colourless. It is taken in doses of two or three drops, as a cordial, in weakness of the stomach, &c. though more frequently used as a perfume. It gives a fine flavour to the officinal spiritus volatilus aromaticus, and occasions the soap pills to sit easy on the stomach.

**OLEUM MAJORANÆ
ESSENTIALE.**

Essential oil of marjoram leaves.

Lond.

This oil is very hot and penetrating, in flavour not near so agreeable as the marjoram itself; when in perfection, it is of a pale yellow colour; by long keeping, it turns reddish: if distilled with too great a heat, it arises of this colour at first. It is supposed by some to be pecu-

peculiarly serviceable in relaxations, obstructions, and mucous discharges of the uterus: the dose is one or two drops.

OLEUM MENTHÆ ESSENTIALE.

Essential oil of the leaves of common mint.
L. E.

This oil smells and tastes strongly of the mint, but is in both respects somewhat less agreeable than the herb itself. It is an useful stomachic medicine; and not unfrequently exhibited in want of appetite, weakness of the stomach, retchings to vomit, and other like disorders, when not accompanied with heat or inflammation: two or three drops, or more, are given for a dose. It is likewise employed externally for the same purposes; and is an excellent ingredient in the stomachic plaster of the shops.

OLEUM MENTHÆ PIPERITIDIS ESSENTIALE.

Essential oil of the leaves of pepper, mint.
L. E.

This possesses the smell, taste, and virtues of the peppermint in perfection; the colour is a pale greenish yellow. It is a medicine of great pungency and subtilty; and diffuses, almost as soon as taken, a glowing warmth through the whole system. In colics, accompanied with great coldness, and in some hysteric complaints, it is of excellent service. A drop or two are in general a sufficient dose.

OLEUM NUCIS MOSCHATÆ ESSENTIALE.

Essential oil of nutmegs.
L. E. +

The essential oil of nutmegs possesses the flavour and aromatic virtues of the spice in an eminent de-

gree. It is similar in quality to the oil of mace, but somewhat less grateful.

OLEUM ORIGANI ESSENTIALE.

Essential oil of the leaves of origanum.
L. E. +

This oil has a very pungent acrimonious taste, and a penetrating smell. It has been chiefly employed externally as an errhine, and for easing pains of the teeth.

OLEUM ESSENTIALE PIPERIS JAMAICENSIS.

Essential oil of Jamaica pepper.
Edinb.

This is a very elegant oil, and may be used as a succedaneum to those of some of the dearer spices. It is of a fine pale colour; in flavour more agreeable than the oil of cloves, and not far short of that of nutmegs. It sinks in water, like the oils of some of the eastern spices.

OLEUM PULEGII ESSENTIALE.

Essential oil of the leaves of pennyroyal.
L. E. +

This oil, in smell and taste, resembles the original plant; the virtues of which it likewise possesses. It is given in hysteric cases, from one to four or five drops.

OLEUM RORISMARINI ESSENTIALE.

Essential oil of rosemary.
L. E.

The oil of rosemary is drawn from the plant in flower. When in perfection, it is very light and thin, pale, and almost colourless; of great fragrancy, though not quite so agreeable as the rosemary itself. It is recommended, in the dose of a few

few drops, in nervous and hyfteric complaints. Boerhaave holds it in great esteem againſt epilepfies, and ſuppreſſions of the uterine purgations, occaſioned by weakneſs and inactivity.

OLEUM LIGNI RHODII ESSENTIALE.

Effential oil of rhodium.

L. E. +

This oil is extremely odoriferous, and principally employed as a perfume in ſcenting pomatums, and the like. Cuſtom has not as yet received any preparation of this elegant aromatic wood into internal uſe.

OLEUM RUTÆ ESSENTIALE.

Effential oil of rue leaves.

L. E. +

The oil of rue has a very acrid taſte, and a penetrating ſmell, reſembling that of the herb, but rather more unpleaſant. It is ſometimes made uſe of in hyſteric diſorders and as an anthelmintic; as alſo in epilepfies proceeding from a relaxed ſtate of the nerves.

Rue yields its oil very ſparingly. The largeſt quantity is obtained from it when the flowers are ready to fall off, and the ſeeds begin to ſhow themſelves: ſuitable maceration, previous to the diſtillation, is here extremely neceſſary.

OLEUM SABINÆ ESSENTIALE.

Effential oil of ſavin leaves.

L. E.

Savin is one of the plants which, in former editions of the Edinburgh Pharmacopœia, were directed to be lightly fermented before the diſtillation: this, however, is not very neceſſary; for ſavin yields, without fermentation, and even without any much maceration, a very large

quantity of oil: the foregoing herb ſtands more in need of a treatment of this kind. The oil of ſavin is a celebrated uterine and emmenagogue: in cold phlegmatic habits, it is undoubtedly a medicine of good ſervice, though not capable of performing what it has been uſually reſented to do. The doſe is, two or three drops, or more.

OLEUM SASSAFRAS ESSENTIALE.

Effential oil of ſassafras.

L. E.

This is the moſt ponderous of all the known eſſential oils, but riſes in diſtillation with ſufficient eaſe: it appears limpid as water, has a moderately pungent taſte, a very fragrant ſmell, exactly reſembling that of the ſassafras. It ſtands greatly commended as a ſudorific, and for purifying the blood and juices: it is likewiſe ſuppoſed to be of ſervice in humoral aſthmas and coughs. The doſe is from one drop to eight or ten; though Geoffroy goes as far as twenty.

The decoction remaining after the diſtillation of the oil, affords by inſpiſſation (ſee chap. vi.) an uſeful extract, of a mild, bitteriſh, ſub-aſtringent taſte. Hoffman ſays, he has given it with great benefit, in doſes of a ſcruple, as a corroborant in cachectic caſes, in the decline of intermitting fevers, and for abating hypochondriacal ſpaſms.

OLEUM TEREBINTHINÆ.

Oil of turpentine.

L. E. +

This is diſtilled in the ſame manner as the foregoing oils; and is ſtrictly an eſſential one, though not uſually ranked in this claſs: it is commonly, but improperly as the College obſerve, called ſpirit of turpentine. It is employed in large quantities for ſome mechanic purpoſes;

poses; and hence the distillation of it is become a particular business.

This oil is a very hot stimulating medicine. It is sometimes given as a sudorific and diuretic, in the dose of two or three drops: in larger doses, it is apt to greatly heat the body, occasion pain of the head and effusion of the semen and liquor of the prostate glands. It has nevertheless been of late taken in considerable doses (along with honey or other convenient vehicles) against the sciatica; and, as is said, with good success. Some have recommended it against venereal runnings: but here it has produced mischievous consequences, inflaming the parts, and aggravating the disorder. Externally, it is not unfrequently employed against rheumatic pains, aches, sprains, for discussing cold tumours, and restraining hæmorrhages.

After the distillation of the turpentine, there remains in the still a brittle resinous substance, of a yellow colour, called *resina flava*, yellow resin [L.]

The only use of this is in external applications, for giving consistence to plasters, and the like purposes.

MOST of the foregoing oils are drawn by our chemists, and easily procurable in a tolerable degree of perfection; those of cinnamon, cloves, nutmegs, and mace, excepted. These are usually imported from abroad; and are for the most part so much adulterated, that it is difficult to meet with such as are at all fit for use.

Nor are the adulterations of these kinds of preparations easily discoverable. The grosser abuses indeed may be readily detected: thus if the oil is mixed with spirit of wine, it will turn milky on the addition

of water; if with expressed oils, rectified spirit will dissolve the essential, and leave the other behind; if with oil of turpentine, on dipping a piece of paper in the mixture, and drying it with a gentle heat, the turpentine will be betrayed by its smell. But the more subtle artists have contrived other methods of sophistication, which elude all trials of this kind.

Some have looked upon the specific gravity of oils as a certain criterion of their genuineness; and accordingly we have given a table of the gravity of several. This, however, is not to be absolutely depended on: for the genuine oils, obtained from the same subjects, oftentimes differ in gravity as much as those drawn from different ones. Cinnamon and cloves, whose oils usually sink in water, yield, if slowly and warily distilled, an oil of great fragrantcy, which is nevertheless specifically lighter than the aqueous fluid employed in the distillation of it; whilst, on the other hand, the last runnings of some of the lighter oils prove sometimes so ponderous as to sink in water.

As all essential oils agree in the general properties of solubility in spirit of wine, indissolubility in water, miscibility with water by the intervention of certain intermedia, volatility in the heat of boiling water, &c. it is plain that they may be variously mixed with one another, or the dearer sophisticated with the cheaper, without any possibility of discovering the abuse by any trials of this kind. And, indeed, it would not be of much advantage to the purchaser, if he had infallible criteria of the genuineness of every individual oil. It is of as much importance, that they be *good*, as that they be *genuine*; for I have often seen genuine oils, from incurious distillation, and long and careless

less keeping, weaker both in smell and taste than the common sophisticated ones.

The smell and taste seem to be the only certain tests that the nature of the thing will admit of. If a bark should have in every respect the appearance of good cinnamon, and should be proved indisputably to be the genuine bark of the cinnamon tree; yet, if it wants the cinnamon flavour, or has it but in a low degree, we reject it; and the case is the same with the oil. It is only from use and habit, or comparisons with specimens of known quality, that we can judge of the goodness, either of the drugs themselves, or of their oils.

Most of the essential oils indeed, are too hot and pungent to be tasted with safety; and the smell of the subject is so much concentrated in them, that a small variation in this respect is not easily distinguished. But we can readily dilute them to any assignable degree. A drop of the oil may be dissolved in spirit of wine; or received on a bit of sugar, and dissolved by that intermedium in water. The quantity of liquor which it thus impregnates with its flavour, or the degree of flavour which it communicates to a certain determinate quantity, will be the measure of the degree of goodness of the oil.

I shall here subjoin some experiments of the quantity of essential oil obtained from different vegetables, reduced into the form of a table. The first column contains the names

of the respective vegetable substances; the second, the quantity of each which was submitted to the distillation; and the third, the quantity of oil obtained. In every other part of this book, where pound weights are mentioned, the Troy pound of twelve ounces is meant: but these experiments having been all made by a pound of sixteen ounces, it was thought expedient to set down the matter of fact in the original weights; especially as the several materials, in the large quantity commonly required for the distillation of oils, are purchased by weights of the same kind. But to remove any ambiguity which might arise from hence, and enable the reader to judge more readily of the yield, a reduction of the weights is given in the next column; which shows the number of parts of each of the subjects from which one part of oil was obtained. To each article is affixed the author's name from whom the experiment was taken: those to which no name is added, are experiments of my own. The different distillations of one subject, several of which are inserted in the table, show how variable the yield of oil is, and that the exotic spices, as well as our indigenous plants, do not always contain the same proportion of this active principle: though it must be observed, also, that part of the differences may probably arise from the operation itself having been more or less carefully performed.

TABLE

TABLE of the Quantity of ESSENTIAL OIL obtained from different
VEGETABLES.

Agallochum wood	10 lb.	4 dra.	320	Hoff.
Angelica root	1 lb.	1 dra.	128	Carth.
Aniseed	1 lb.	4 dra.	32	Neum.
Aniseed	3 lb.	1 oz.	48	
Aniseed	4 lb.	1 oz.	64	
Afafetida	4 oz.	1 dra.	32	Neum.
Calamus aromaticus	50 lb.	2 oz.	185	Hoff.
Calamus aromaticus	1 lb.	2 scr.	192	Neum.
Caraway seeds	4 lb.	2 oz.	32	
Caraway seeds	2 lb.	9 dra.	28 $\frac{1}{2}$	
Caraway seeds	1 cwt.	83 oz.	21 $\frac{1}{2}$	
Caroline thistle root	1 lb.	2 $\frac{1}{2}$ scr.	153	Neum.
Cardamom seeds	1 oz.	1 scr.	24	Neum.
Carrot seeds	2 lb.	1 $\frac{1}{2}$ dra.	171	
Cascarilla	1 lb.	1 dra.	128	Carth.
Camomile flowers	1 lb.	30 gra.	256	Carth.
Common camomile flowers	6 lb.	5 dra.	153	
Wild camomile flowers	1 lb.	20 gra.	384	Carth.
Wild camomile flowers	6 lb.	2 $\frac{1}{2}$ dra.	307	
Chervil leaves, fresh	9 lb.	30 gra.	2304	Neum.
Cedar-wood	1 lb.	2 dra.	64	Margg.
Cinnamon	1 lb.	1 dra.	128	Sala.
Cinnamon	1 lb.	2 $\frac{1}{2}$ scr.	153	Neum.
Cinnamon	4 lb.	6 dra.	85 $\frac{1}{2}$	Lemery
Cinnamon	1 lb.	2 dra.	64	Carth.
Cinnamon	1 lb.	8 scr.	45 $\frac{1}{2}$	Carth.
Clary seeds	4 lb.	2 dra.	256	
Clary in flower, fresh	130 lb.	3 $\frac{1}{2}$ oz.	594	
Cloves	1 lb.	1 $\frac{1}{2}$ oz.	10 $\frac{2}{3}$	Teichm.
Cloves	1 lb.	2 $\frac{1}{2}$ oz.	7 $\frac{1}{3}$	Carth.
Cloves	2 lb.	5 oz.	6 $\frac{1}{2}$	Hoff.
Copaiba balsam	1 lb.	6 oz.	2 $\frac{2}{3}$	Ho.
Copaiba balsam	1 lb.	8 oz.	2	
Cummin-feed	1 bush	21 oz.		
Dictamnus Creticus	1 lb.	30 gra.	256	
Dill-feed	4 lb.	2 oz.	32	
Elecampane root	2 lb.	3 $\frac{1}{2}$ scr.	245	Neum.
Elemi	1 lb.	1 oz.	16	Neum.
Fennel-feed, common	2 oz.	1 scr.	48	Neum.
Fennel-feed, sweet	1 bush	18 oz.		
Galangal root	1 lb.	1 dra.	128	Carth.
Garlick root, fresh	2 lb.	30 gra.	256	Neum.
Ginger	1 lb.	1 dra.	128	Neum.
Horseradish root, fresh	8 oz.	15 gra.	256	Neum.
Hyssop leaves	2 lb.	1 $\frac{1}{2}$ dra.	237	Neum.

yielded of essential oil

so that one part of oil was obtained from

Hyssop

Hyssop leaves	1 lb.	1½ dra.	85	Carth.
Hyssop leaves	1 lb.	2 dra.	64	Carth.
Hyssop leaves, fresh	2 cwt.	6 oz.	597	
Hyssop leaves, fresh	10 lb.	3 dra.	427	
Hyssop leaves, fresh	30 lb.	9 dra.	427	
Juniper-berries	8 lb.	3 oz.	42½	Hoff.
Juniper-berries	1 lb.	3 dra.	42½	Carth.
Lavender in flower, fresh	48 lb.	12 oz.	64	
Lavender in flower, fresh	30 lb.	6½ oz.	72	
Lavender in flower, fresh	13½ lb.	60 oz.	403	
Lavender flowers, fresh	2 lb.	4 dra.	64	Hoff.
Lavender flowers, dried	4 lb.	2 oz.	32	
Lavender flowers, dried	2 lb.	1 oz.	32	Hoff.
Lavender flowers, dried	4 lb.	3 oz.	21½	Hoff.
Broad leaved lavender } flowers, dry }	4 lb.	1 oz.	64	Hoff.
	1 lb.	2 dra.	64	Carth.
Lovage-root	1 lb.	1 dra.	128	Carth.
Mace	1 lb.	5 dra.	25½	Neum.
Mace	1 lb.	6 dra.	21½	Carth.
Marjoram in flower, fresh	81 lb.	3¼ oz.	347	
Marjoram in flower, fresh	13½ lb.	3½ dra.	493	
Marjoram in flower, fresh	34 lb.	1½ oz.	362	
Marjoram leaves, fresh	18½ lb.	4 dra.	592	
Marjoram leaves, dried	4 lb.	1 oz.	64	Hoff.
Masterwort root	1 lb.	30 gra.	256	Neum.
Milfoil flowers, dried	14 lb.	4 dra.	448	
Mint in flower, fresh	6 lb.	4½ dra.	177	
Mint leaves, dried	4 lb.	1½ oz.	42½	Hoff.
Peppermint, fresh	4 lb.	3 dra.	170½	
Myrrh	1 lb.	2 dra.	64	Hoff.
Myrrh	1 lb.	3 dra.	42½	Neum.
Nutmegs	1 lb.	1 oz.	16	Hoff.
Nutmegs	1 lb.	1 oz.	16	Geoff.
Nutmegs	1 lb.	4 dra.	32	Neum.
Nutmegs	1 lb.	6 dra.	21½	Sala.
Nutmegs	1 lb.	5 dra.	25½	Carth.
Parsley seeds	2 lb.	1 dra.	256	
Parsley leaves, fresh	238 lb.	2 oz.	1904	
Parsnep seeds	8 lb.	2 dra.	512	
Pennyroyal in flower, fresh	13 lb.	6 dra.	277	
Black pepper	2 lb.	6 dra.	42½	
Black pepper	1 lb.	2½ dra.	82	Neum.
Black pepper	1 lb.	4 scr.	96	Carth.
Black pepper	1 lb.	1 dra.	128	Heister.
Black pepper	6 lb.	3 dra.	256	Geoff.
Pimento	1 oz.	30 gra.	16	Neum.
Rhodium wood	1 lb.	3 dra.	42½	Neum.
Rhodium wood	1 lb.	2 dra.	64	Sala.
Rhodium wood	1 lb.	3 dra.	42½	Sala.
Rhodium wood	1 lb.	3 dra.	42½	Carth.

yielded of essential oil

so that one part of oil was obtained from

Rho-

Rhodium wood	1 lb.	4 dra.	32	<i>Carth.</i>
Rosemary in flower	1 cwt.	8 oz.	224	
Rosemary leaves	1 lb.	2 dra.	64	<i>Sala.</i>
Rosemary leaves	1 lb.	3 dra.	42 $\frac{2}{3}$	<i>Sala.</i>
Rosemary leaves	3 lb.	3 $\frac{1}{2}$ dra.	121	<i>Neum.</i>
Rosemary leaves	1 lb.	1 dra.	128	<i>Carth.</i>
Rosemary leaves	1 lb.	1 $\frac{1}{2}$ dra.	82	<i>Carth.</i>
Rosemary leaves, fresh	70 lb.	5 oz.	224	
Roses	100 lb.	4 dra.	3200	<i>Tachen</i>
Roses	100 lb.	1 oz.	1600	<i>Homb.</i>
Roses	12 lb.	30 gra.	768	<i>Hoff.</i>
Rue	10 lb.	2 dra.	640	<i>Hoff.</i>
Rue	10 lb.	4 dra.	320	<i>Hoff.</i>
Rue in flower	4 lb.	1 dra.	512	
Rue in flower	60 lb.	2 $\frac{1}{2}$ oz.	507	
Rue with the seeds	72 lb.	3 oz.	384	
Saffron	1 lb.	1 $\frac{1}{2}$ dra.	85 $\frac{1}{2}$	<i>Vogel</i>
Sage leaves	1 lb.	5 scr.	77	<i>Carth.</i>
Sage in flower, fresh	34 lb.	1 $\frac{1}{2}$ oz.	544	
Sage of virtue in flower	27 lb.	6 dra.	576	
Sage of virtue in flower	8 lb.	1 $\frac{1}{2}$ dra.	681	
Sassafras	6 lb.	1 $\frac{1}{4}$ oz.	55	<i>Hoff.</i>
Sassafras	6 lb.	2 oz.	48	<i>Neum.</i>
Savin	2 lb.	5 oz.	6 $\frac{2}{3}$	<i>Hoff.</i>
Saunders, yellow	1 lb.	2 dra.	64	<i>Carth.</i>
Smallage seeds	1 lb.	2 $\frac{1}{2}$ scr.	154	<i>Neum.</i>
Stechas in flower, fresh	5 $\frac{1}{2}$ lb.	2 dra.	368	
Thyme in flower, fresh	2 cwt.	5 $\frac{1}{2}$ oz.	652	
Thyme in flower, dry	3 $\frac{3}{4}$ lb.	1 $\frac{1}{2}$ dra.	298	
Lemon-thyme in flower, fresh	51 lb.	1 $\frac{1}{4}$ oz.	653	
Lemon-thyme in flower, fresh	98 lb.	2 $\frac{1}{2}$ oz.	627	
Lemon-thyme, dried a little	104 lb.	3 oz.	555	
Wormwood leaves, dry	4 lb.	1 oz.	64	
Wormwood leaves, dry	18 lb.	1 $\frac{1}{2}$ oz.	192	
Wormwood leaves, dry	25 lb.	3 $\frac{1}{2}$ oz.	114	
Zedoary	1 lb.	1 dra.	128	<i>Neum.</i>

yielded of essential oil

so that one part of oil was obtained from

S E C T. II.

SIMPLE DISTILLED WATERS.

THE effluvia which exhale in the air from many vegetables, particularly from those of the odorous kind, consist apparently of principles of great subtilty and activity, capable of strongly and suddenly affecting the brain and nervous system, especially in those whose nerves are of great sensibility; and likewise of operating, in a slower manner, upon the system of grosser vessels. Thus Boerhaave observes, that in hysterical and hypochondriacal persons, the fragrant odour

odour of the Indian hyacinth excites strange spasms, which the strong scent of rue relieves: that the effluvia of the walnut-tree occasion headaches, and make the body costive; that those of poppies procure sleep; and that the smell of bean blossoms, long continued, disorders the senses. Lemery relates, from his own knowledge, that several persons were purged by staying long in a room where damask roses were drying.

Some of the chemists have indulged themselves in the pleasing survey of these presiding spirits, as they are called, of vegetables; their peculiar nature in the different species of plants; their exhalation into the atmosphere by the sun's heat, and dispersion by winds; their rendering the air of particular places medicinal, or otherwise, according to the nature of the plants that abound. They have contrived also different means for collecting these fugitive emanations, and concentrating and condensing them into a liquid form; employing either the native moisture of the subject, or an addition of water, as a vehicle or matrix for retaining them.

THE process which has been judged most analogous to that of nature, is the following. The subject fresh gathered at the season of its greatest vigour, with the morning dew upon it, is laid lightly and unbruised in a shallow vessel, to which is adapted a low head with a recipient; under the vessel a live coal is placed, and occasionally renewed, so as to keep up an uniform heat, no greater than that which obtains in the atmosphere in summer, viz. about 85 degrees of Fahrenheit's thermometer. In this degree of heat there arises, exceeding slowly, an invisible vapour, which condenses in the head into dewy

drops, and falls down into the receiver; and which has been supposed to be the very substance that the plant would have spontaneously emitted in the open air.

But on submitting to this process many kinds of odoriferous vegetables, I have always found the liquors obtained by it to be very different from the natural effluvia of the respective subjects: they had very little smell, and no remarkable taste. It appeared that a heat, equal to that of the atmosphere, is incapable of raising in close vessels those parts of vegetables which they emit in the open air. It may therefore be presumed, that in this last case some other cause concurs to the effect: that it is not the sun's heat alone which raises and impregnates the air with the odorous principles of vegetables, but that the air itself, or the watery humidity with which it abounds, acting as a true solvent, extracts and imbibes them; so that the natural effluvia of a plant may be looked upon as an infusion of the plant made in air. The purgative virtue of the damask-rose, and the astringency of the walnut-tree, which, as above observed, are in some measure communicated to the air, may be totally extracted by infusion both in watery and spirituous menstrua, but never rise in distillation with any degree of heat: and the volatile odours of aromatic herbs, which are diffused through the atmosphere in the lowest warmth, cannot be made to distil without a heat much greater than is ever found to obtain in a shaded air.

We apprehend, that the effluvia arising from growing vegetables, are chiefly exhaled by the living energy of the plant: the odorous matter is a real secretion, which cannot be performed independent of active vessels; and it is reasonable to allow the same powers for the

exhalation of these effluvia, as for the transpiration of their watery parts.'

The above process, therefore, and the theory on which it is built, appear to be faulty in two points:

1. In supposing that all those principles, which naturally exhale from vegetables, may be collected by distillation; whereas there are many which the air extracts in virtue of its dissolving power; 'some are also incapable of being collected in a visible and inelastic form;' and there are those which are artificially separable by dissolvents only: 2. In employing a degree of heat insufficient for separating even those parts which are truly exhalable by heat.

THE foregoing method of distillation is commonly called *distillation by the cold still*; but those who have practised it, have generally employed a considerable heat. A shallow leaden vessel is filled with the fresh herbs, flowers, &c. which are heaped above it; so that when the head is fitted on, this also may be filled a considerable way. A little fire is made under the vessel, sufficient to make the bottom much hotter than the hand can bear, care being taken only not to heat it so far as to endanger scorching any part of the subject. If the bottom of the vessel is not made so hot as to have this effect on the part contiguous to it, it is not to be feared that the heat communicated to the rest of the included matter, will be great enough to do it any injury. By this management, the volatile parts of several odorous plants, as mint, are effectually forced over; and if the process has been skilfully managed, the distilled liquor proves richly impregnated with the native odour and flavour of the subject, without having received any kind of disagreeable impression from the heat made use of.

This process has been chiefly practised in private families; the slowness of the distillation, and the attendance and care necessary for preventing the scorching of some part of the plant, so as to communicate an ungrateful burnt flavour to the liquor, rendering it inconsistent with the dispatch requisite in the larger way of business.

ANOTHER method has therefore been had recourse to, that by the common still, called, in distinction from the foregoing, the *hot still*. Here a quantity of water is added to the plant to prevent its burning; and the liquor is kept nearly of a boiling heat, or made fully to boil; so that the vapour rises plentifully into the head, and passing thence into a spiral pipe or worm placed in a vessel of cold water, is there condensed, and runs out in drops quickly succeeding one another, or in a continued stream. The additional water does not at all weaken the produce; for the most volatile parts of the subject rise first, and impregnate the liquor that first distils: as soon as the plant has given over its virtue sufficiently, which is known by examining from time to time the liquor that runs from the nose of the worm, the distillation is to be stopped.

This is the method of distillation commonly practised for the official waters. It is accompanied with one imperfection, affecting chiefly those waters whose principal value consists in the delicacy of their flavour; this being not a little injured by the boiling heat usually employed, and by the coagitation of the odorous particles of the subject with the water. Sometimes also a part of the plant sticks to the sides of the still, and is so far scorched as to give an ungrateful taint to the liquor.

THERE is another method of managing this operation, which I have already recommended for the distillation of the more volatile essential oils, and which is equally applicable to that of the waters. In this method, the advantages of the foregoing ones are united, and their inconveniences obviated. A quantity of water being poured into the still, and the herbs or flowers placed in a basket over it, there can be no possibility of burning; the water may be made to boil, but so as not to rise up into the basket, which would defeat the intention of this contrivance. The hot vapour of the water passing lightly through all the interstices of the subject matter, imbibes and carries over the volatile parts unaltered in their native flavour. By this means the distilled waters of all those substances whose oils are of the more volatile kind, are obtained in the utmost perfection, and with sufficient dispatch; for which last intention the still may be filled quite up to the head.

In the distillation of essential oils, the water, as observed in the foregoing section, imbibes always a part of the oil. The distilled liquors here treated of, are no other than water thus impregnated with the essential oil of the subject; whatever smell, taste, or virtue, is here communicated to water, or obtained in the form of a watery liquor, being found in a concentrated state in the oil. The essential oil, or some part of it, more attenuated and subtilized than the rest, is the direct principle on which the title of *spiritus rectior*, or presiding spirit, has been bestowed.

All those vegetables therefore which contain an essential oil, will give over some virtue to water by distillation: but the degree of the impregnation of the water, or the

quantity of water which a plant is capable of satiating with its virtue, are by no means in proportion to the quantity of its oil. The oil satiates only the water that comes over at the same time with it: if there is more oil than is sufficient for this satiation, the surplus separates, and concretes, in its proper form, not miscible with the water that arises afterwards. Some odoriferous flowers, whose oil is in so little quantity, that scarcely any visible mark of it appears, unless fifty or an hundred pounds or more are distilled at once, give nevertheless as strong an impregnation to water as those plants which abound most with oil.

MANY have been of opinion, that distilled waters may be more and more impregnated with the virtues of the subject, and their strength increased to any assigned degree, by *cobobation*, that is, by redistilling them a number of times from fresh parcels of the plant. Experience, however, shows the contrary; a water skillfully drawn in the first distillation, proves on every repeated one not stronger but more disagreeable. Aqueous liquors are not capable of imbibing above a certain quantity of the volatile oil of vegetables; and this they may be made to take up by one, as well as by any number of distillations: the oftener the process is repeated, the ungrateful impression which they generally receive from the fire even at the first time becomes greater and greater. Those plants which do not yield at first waters sufficiently strong, are not proper subjects for this process, since their virtue may be obtained much more advantageously by others.

*General Rules for the DISTILLATION
of the OFFICIAL SIMPLE WA-
TERS.*

I.

Where they are directed fresh, such only must be employed: but some are allowed to be used dry, as being easily procurable in this state at all times of the year, though rather more elegant waters might be obtained from them whilst green. *L.*

When fresh and juicy herbs are to be distilled, thrice their weight of water will be fully sufficient: but dry ones require a much larger quantity. In general, there should be so much water, that after all intended to be distilled has come over, there may be liquor enough left to prevent the matter from burning to the still.

II.

The distillation may be performed in an alembic with a refrigerator, the junctures being luted. *E. +*

III.

Plants differ so much, according to the soil and season of which they are the produce, and likewise according to their own age, that it is impossible to fix the quantity of water to be drawn from a certain weight of them to any invariable standard. The distillation may always be continued as long as the liquor runs well-flavoured off the subject, and no longer.

If the herbs are of prime goodness, they must be taken in the weights prescribed. But when fresh ones are substituted to dry, or when the plants themselves are the produce of unfavourable seasons, and weaker than ordinary, the quantities are to be varied according to the discretion of the artist. *L.*

After the odorous water, alone intended for use, has come over, an acidulous liquor arises, which has sometimes extracted so much from the copper head of the still as to prove emetic. To this are owing the anthelmintic virtues attributed to certain distilled waters.

IV.

In a preceding edition of the Edinburgh Pharmacopœia, some vegetables were ordered to be slightly fermented with the addition of yeast, previously to the distillation.

The principle on which this management is founded, is certainly just; for the fermentation somewhat opens and unlocks their texture, so as to make them part with more in the subsequent distillation than could be drawn over from them without some assistance of this kind. Those plants, however, which require this treatment, are not proper subjects for simple waters to be drawn from; their virtues being obtainable to better advantage by other processes.

V.

If any drops of oil swim on the surface of the water, they are to be carefully taken off. *E. +*

VI.

That the waters may keep the better, about one-twentieth part their weight of proof-spirit may be added to each after they are distilled. *L.*

A great number of distilled waters was formerly kept in the shops, and are still retained in foreign pharmacopœias. The Faculty of Paris direct, in the last edition of their *Codex Medicamentarius*, no less than one hundred and twenty-five different waters, and one hundred and thirty different ingredients in one single water. Near one half of these preparations have scarcely

any virtue or flavour from the subject, and many of the others are insignificant.

The Colleges of London and Edinburgh have rejected these ostentatious superfluities, and given an elegant and compendious set of waters, sufficient for answering such purposes as these kinds of preparations are applied to in practice. Distilled waters are employed chiefly as grateful diluents, as suitable vehicles for medicines of greater efficacy, or for rendering disgusting ones more acceptable to the palate and stomach; few are depended on, in any intention of consequence, by themselves.

AQUA DESTILLATA.

Distilled water.

Edinb.

‘Let well or river water be distilled in very clean vessels till about two thirds are drawn off.

‘Native water is seldom or never found pure, and generally contains earthy, saline, metallic, or other matters. Distillation is therefore employed as a means of freeing it of these heterogeneous parts. For some pharmaceutical purposes distilled water is absolutely necessary: thus, if we employ hard undistilled water for dissolving sugar of lead, instead of a perfect solution, we produce a milky-like cloud, owing to a real decomposition of parts.’

AQUA ALEXETERIA SIMPLEX.

Simple alexeterial water.

Lond.

Take of

Spearmint leaves, fresh, a pound and a half;
Sea-wormwood tops, fresh;
Angelica leaves, fresh, each one pound;

Water, as much as is sufficient to prevent an empyreuma.

Draw off by distillation three gallons.

Edinb. +

Take of

Elder flowers, moderately dried, two pounds;

Angelica leaves, fresh gathered, one pound;

Water, a sufficient quantity.

Distil off three gallons.

THIS water is sufficiently elegant with regard to taste and smell; though few expect from it such virtues as its title seems to imply. It is used occasionally for vehicles of alexipharmac medicines, or in juleps to be drank after it, as coinciding with the intention; but in general, is not supposed to be itself of any considerable efficacy.

AQUA SEMINUM ANETHI.

Dill-seed water.

Lond.

Take of

Dill seeds, a pound and a half;

Water, as much as is sufficient to prevent an empyreuma.

Draw off by distillation a gallon.

THIS water, which turns out pretty strong of the dill seeds, is sometimes employed as the basis of carminative juleps. It is similar in flavour to a water drawn from caraway seeds, but less agreeable.

AQUA SEMINUM ANETHI SIMPLEX.

Simple dill-seed water.

Edinb.

Take of

Dill seeds, one pound;

Pour on as much water as when ten pounds have been drawn off by distillation, there may

re-

remain as much as is sufficient to prevent an empyreuma.

After proper maceration, let ten pounds be drawn off.

‘ In the same manner may be prepared ten pounds of simple distilled water, from

Cinnamon, one pound.

Cassia lignea, a pound and a half.

Peppermint leaves, three pounds.

Common - mint leaves, three pounds.

Pennyroyal leaves, three pounds.

Jamaica pepper, half a pound.

Fresh pale roses, six pounds.

Fresh lemon-peel, two pounds.

Fresh Seville orange peel, two pounds.

‘ THESE are all the distilled waters, and the directions for preparing them, given in the last edition of the Edinburgh Pharmacopœia. It will, however, be useful for the less experienced artists to consult Dr Lewis’s directions, delivered at full length in this book. The particular virtues of each will be noticed at the end of the several formulæ directed in the last edition of the London Pharmacopœia.’

AQUA CORTICUM AURANTIORUM SIMPLEX.

Simple orange-peel water.

Lond.

Take of

Yellow peel of Seville oranges, dried, four ounces;

Water, as much as is sufficient to prevent burning.

Distil off one gallon.

THIS water proves very weak of the orange-peel. It is designed for a diluter in fevers and other disorders where the stomach and palate are subject to receive quick disgust; in which cases (as the committee ob-

serve) cordial waters, especially if their use is to be long continued, ought to be but lightly impregnated with any flavour, however agreeable.

AQUA CASTOREI.

Castor water.

Lond.

Take of

Russia castor, one ounce;

Water, as much as will prevent burning.

Draw off two pints.

CASTOR yields almost all its flavour in distillation to water; but treated in the same manner with spirit of wine, gives over nothing. The spirit of castor formerly kept in the shops, had none of the smell or virtues of the drug; whilst the water here directed proves, when fresh drawn, very strong of it.

It is remarkable, that the virtues of this animal substance reside in a volatile oil, analogous to the essential oils of vegetables: some are reported to have obtained, in distilling large quantities of the drug, a small portion of oil, which smelt extremely strong of the castor, and diffused its ungrateful scent to a great distance.

This water is made use of in hysterical cases, and some nervous complaints, though it has not been found to answer what many people expect from it: it loses greatly of its flavour in keeping.

AQUA CERASORUM NIGRORUM.

Black-cherry water.

Let any quantity of black cherries be bruised, so as that the stones may be broken, and then distilled according to art, with only a small proportion of water.

THIS is a very grateful water, and has long maintained a place in

the shops. It has frequently been employed by physicians as a vehicle, in preference to the other distilled waters; and among nurses, and others who have the care of young children, has been the first remedy against the convulsive disorders to which children are so often subject.

This water has nevertheless of late been brought into disrepute, and by some looked upon as poisonous. They observe, that it receives its flavour principally from the cherry stones; and that these kernels, like many others, bear a resemblance in taste to the leaves of the lauro-cerasus, which have some time past been discovered to yield, by infusion or distillation, the most sudden poison known: some physicians of Worcester have lately found, by trial purposely made, that a distilled water very strongly impregnated with the flavour of the cherry kernels (no more than two pints being distilled from fourteen pounds of the cherry stones) proved in like manner poisonous to brutes. The committee of the London College repeated the same experiment, and found the effects agreeable to those gentlemen's report.

It by no means follows from these trials, nor after such long experience can it be imagined, that black-cherry water, when no stronger than the shops have been accustomed to prepare it, is unsafe. These kernels, as the committee observe, plainly resemble opium, and some other things, which poison only when taken in too great a quantity; the water from the very laurel leaves is harmless when duly diluted; and even spirit of wine proves a poison of its kind, not greatly different, if drank to a certain degree of excess. Nor can it be concluded, from the trials with the strong black-cherry water on dogs, &c. that even this will have the same effects in

the human body; the kernels of many sorts of fruits being in substance poisonous to brutes, though innocent to man.

It is possible, however, that this water in any degree of strength may not be altogether safe to the tender age of infants, where the principles of life are but just beginning as it were to move: it is possible, that it may there have had pernicious effects, without being suspected; the symptoms it would produce, if it should prove hurtful, being such as children are often thrown into from the disease which it is imagined to relieve. On these considerations, both the London and Edinburgh Colleges have chosen to lay it aside; more especially as it has been too often counterfeited with a water distilled from bitter almonds, which are known to communicate a poisonous quality.

AQUA CINNAMOMI SIMPLEX.

*Simple cinnamon water.
Lond.*

Take of

Cinnamon, one pound;

Water, as much as will prevent burning.

Digest off one gallon.

THIS is a very grateful and useful water, possessing in an eminent degree the fragrance and aromatic cordial virtues of the spice. Great care should be had in the choice of the cinnamon, to avoid the too common imposition of casia being substituted in its room: this latter yields a water much less agreeable than that of cinnamon, and whose flavour is manifestly empyreumatic. The two drugs may be easily distinguished from one another by the marks laid down under the respective articles in the Second Part of this work.

The

The virtues of all these waters depend upon their containing a portion of the oil of the subject. The oil of cinnamon is very ponderous, and arises more difficultly than that of any of the other vegetable matters from which simple waters are ordered to be drawn. This observation directs us, in the distillation of this water, to make use of a quick fire, and a low vessel. For the same reason, the water does not keep so well as might be wished; the ponderous oil parting from it in time, and falling to the bottom when the liquor loses its milky hue, its fragrant smell, and aromatic taste. Some recommend a small proportion of sugar to be added, in order to keep the oil united with the water.

AQUA CHAMÆMELI.

Camomile water.

Edinb. +

Take any quantity of camomile flowers, and so much water as will prevent burning. Distil off the water so long as it proves sufficiently strong of the flavour of the flowers.

Camomile flowers were ordered in the former editions to be fermented previously to the distillation, a treatment which they stand little in need of; for they give over without any fermentation, as much as that process is capable of enabling them to do. In either case the smell and peculiar flavour of the flowers arise, without any thing of the bitterness; this remaining behind in the decoction; which, if duly depurated and inspissated, yields an extract similar to that prepared from the flowers in the common manner. The distilled water has been used in flatulent colics, and the like, but is at present held in no great esteem.

AQUA FENICULI.

Fennel water.

Lond.

Take of

Sweet-fennel seeds, one pound;
Water, as much as is sufficient
to prevent an empyreuma.

Distil off one gallon.

Edinb. +

Take of

Fennel leaves, fresh, any quantity;

Water, three times as much.

Distil as long as the water runs well flavoured.

THE first of these waters is a sufficiently grateful one, and the other is not unpleasant: the leaves should be taken before the plant has run into flower; for after this time they are much weaker, and less agreeable. Some have observed, that the upper leaves and tops, before the flowers appear, yield a more elegant water, and a remarkably finer essential oil than the lower ones; and that the oil obtained from the one swims on water, whilst that of the other sinks. No part of the herb, however, is equal in flavour to the seeds.

AQUA HYSSOPI.

Hyssop water.

Edinb. +

This is distilled from the fresh leaves of hyssop, after the same manner as the water of fennel leaves.

HYSSOP water has been held by some in considerable esteem as an uterine and a pectoral medicine. It was directed in a former edition of the Edinburgh Pharmacopœia for making up the black pectoral troches, but is now exchanged for common water. Few at present expect any singular virtues from it,

B b 4

nor

nor is it often made use of, or met with in the shops.

AQUA MELISSÆ.

Balm water.

Edinb. +

This is prepared by distilling the green leaves of balm, as in the foregoing process.

In the former editions of the Edinburgh Pharmacopœia, this water was ordered to be cohobated, or redistilled from fresh quantities of the herb. This management seems to have been taken from Boerhaave, who has a very high opinion of the water thus prepared: he says, he has experienced in himself extraordinary effects from it, taken on an empty stomach; that it has scarce its equal in hypochondriacal and hysterical cases, the chlorosis, and palpitation of the heart, as often as these diseases proceed from a disorder of the spirits rather than from any collection of morbid matter.

For my own part, I have already given my opinion with regard to the cohobation of these liquors; and shall here only observe, that whatever virtues are lodged in balm, they may be much more perfectly and advantageously extracted by cold infusion in aqueous or spirituous menstrua: in this process, the liquor suffers no injury from being returned on fresh parcels of the herb; a few repetitions will load it with the virtues of the subject, and render it very rich. The impregnation here is almost unlimited; but in distilled waters it is far otherwise.

AQUA MENTHÆ VULGARIS SIMPLEX.

Simple spearmint water.

Lond.

Take of

Spearmint leaves, dried, a pound and a half;

Water, as much as is sufficient to prevent burning.

Draw off by distillation one gallon.

THIS water smells and tastes very strong of the mint; and proves in many cases an useful stomachic. Boerhaave commends it (cohobated) as a present and incomparable remedy for strengthening a weak stomach, and curing vomiting proceeding from cold viscid phlegm; as also in henteries.

AQUA MENTHÆ PIPERITIDIS SIMPLEX.

Simple peppermint water.

Lond.

Take of

Peppermint leaves, dry, a pound and a half;

Water, as much as will prevent and empyreuma.

Draw off by distillation one gallon.

THIS is a very elegant and useful water; it has a warm pungent taste, exactly resembling that of the peppermint itself. A spoonful or two taken at a time, warm the stomach, and give great relief in cold, flatulent colics. Some have substituted a plain infusion of the dried leaves of the plant, which is not greatly different in virtue from the distilled water.

AQUA PIPERIS JAMAICENSIS.

Water of Jamaica pepper.

Lond.

Take of

Jamaica pepper, half a pound;

Water, as much as will prevent burning.

Distil off one gallon.

THIS distilled water is a very elegant one, and has of late come pretty much into use: the hospitals employ it as a succedaneum to the

the more costly spice waters. It is, however, inferior in gratefulness to the spirituous water of the same spice hereafter directed.

AQUA PULEGII SIMPLEX.

Simple pennyroyal water.

Lond.

Take of

Pennyroyal leaves, dry, a pound and a half;

Water, as much as will prevent burning.

Draw off by distillation one gallon.

THIS water possesses in a considerable degree the smell, taste, and virtues of the pennyroyal. It is frequently taken in hysteric cases, and not without good effects.

AQUA ROSARUM DAMASCENARUM.

Damask rose water.

Lond.

Take of

Damask roses, fresh gathered, six pounds;

Water, as much as will keep them from burning.

Distil off a gallon of the water.

THIS water is principally valued on account of its fine flavour, which approaches to that generally admired in the rose itself. The purgative virtue of the roses remains entire in the liquor left in the still, which has therefore been generally employed for making the solutive honey and syrup, instead of a decoction or infusion of fresh roses prepared on purpose: And this piece of frugality the College have now admitted. A distilled water of red roses has been sometimes called for in the shops, and supplied by that of damask roses, diluted with common water: this is a very venial substitution; for the

water drawn from the red rose has no quality which that of the damask does not possess in a far superior degree; neither the purgative virtue of the one, nor the astringency of the other, arising in distillation.

AQUA RUTÆ.

Rue water.

This is to be distilled from the fresh leaves of rue, and cohobated on fresh parcels of them, after the same manner as the aqua melissæ.

RUE gives over in this process the whole of its smell, and great part of its pungency. The distilled water stands recommended in epileptic cases, the hysteric passion, for promoting perspiration, and other natural secretions.

AQUA SABINÆ.

Savin water.

This is distilled from the fresh leaves of savin, after the same manner as aqua angelica.

THIS water is by some held in considerable esteem for the same purposes as the distilled oil of savin. Boerhaave relates, that he has found it (when prepared by cohobation) to give an almost incredible motion to the whole nervous system, and that when properly used, it proves eminently serviceable for promoting the menses and the hemorrhoidal flux.

AQUA SAMBUCI.

Elder flower water.

This is distilled from fresh elder flowers, after the same manner as the aqua angelicæ.

THIS water smells considerably of the flowers; but is rarely made use of.

SECT.

S E C T. III.

Spirituos DISTILLED WATERS and SPIRITS.

THE flavour and virtues of distilled waters are owing, as observed in the preceding section, to their being impregnated with a portion of the essential oil of the subject from which they are drawn. Spirit of wine, considered as a vehicle for these oils, has this advantage above water, that it is their proper menstruum, and keeps all the oil that rises with it perfectly dissolved into an uniform limpid liquor.

Nevertheless, many substances, which, on being distilled with water, impart to it their virtues in great perfection; if treated in the same manner with spirit of wine, scarce give over to it any smell or taste. This difference proceeds from hence, that spirit is not susceptible of so great a degree of heat as water. Liquids in general, when made to boil, have received as great a heat as they are capable of sustaining: now, if the extent of heat between freezing and boiling water, as measured by thermometers, be taken for a standard, spirit of wine will be found to boil with less than four-fifths of that heat, or above one-fifth less than the heat of boiling water. It is obvious therefore, that substances may be volatile enough to rise with the heat of boiling water, but not with that of boiling spirit.

Thus if cinnamon, for instance, be committed to distillation with a mixture of spirit of wine and water, or with a pure proof-spirit, which is no other than a mixture of about equal parts of the two; the spirit will arise first, clear, colourless, and transparent, and almost without any

taste of the spice; but as soon as the more ponderous watery fluid begins to arise, the oil comes freely over with it, so as to render the liquor highly odorous, sapid, and of a milky hue.

The proof-spirits usually met with in the shops are accompanied with a degree of ill flavour; which though concealed by means of certain additions, plainly discovers itself in distillation. This nauseous relish does not begin to arise till after the purer spirituous part has come over; which is the very time that the virtues of the ingredients begin also most plentifully to distill; and hence the liquor receives an ungrateful taint. To this cause principally is owing the general complaint, that the cordials of the apothecary are less agreeable than those of the same kind prepared by the distiller; the latter being extremely curious in rectifying or purifying the spirits (when designed for what he calls fine goods) from all ill flavour.

SPIRITUS VINI
RECTIFICATUS.

*Rectified spirit of wine.
Edinb. +*

Take any quantity of French brandy, and with a very gentle heat distil it to one half.

This rectified spirit, being digested for two days with one-fourth its quantity of dry salt of tartar in powder, and then distilled in a glass cucurbit, with a very gentle heat, becomes ALCOHOL.

Spirits distilled from malt liquors, or other fermented substances, after being rectified in the above method, require further purification;

tion; namely, repeated distillation from an equal quantity of spring water.

FRENCH brandy is rather too dear an article in this country for distillation; nor is the spirit obtained from it any ways preferable to one procurable from cheaper liquors. The coarser inflammable spirits may be rendered perfectly pure, and fit for the nicest purposes, by the following method.

If the spirit is exceedingly foul, mix it with about an equal quantity of water, and distil with a slow fire; discontinuing the operation as soon as the liquor begins to run milky, and discovers, by its nauseous taste, that the impure and phlegmatic part is arising. By this treatment, the spirit leaves a considerable portion of its foul oily matter behind it in the water, which now appears milky and turbid, and proves highly disagreeable in taste. If the spirit was not very foul at first, this ablution is not necessary; if extremely so, it will be needful to repeat it once, twice, or oftener.

As vinous spirits arise with a less degree of fire than watery liquors, we are hence directed to employ, in the distillation of them, a heat less than that in which water boils: and if due regard be had to this circumstance, very weak spirits may, by one or two wary distillations, be tolerably well freed from their aqueous phlegm; especially if the distilling vessels are of such a height, that the spirit, by the heat of a water-bath, may but just pass over them: in such case, the phlegmatic vapours which arise for a little way along with the spirit, will condense and fall back again before they can come to the head. Very pompous instruments have been contrived for this purpose, and carried in a spiral or serpentine form to an extraordinary

height. The spirit, ascending thro' these, was to leave all the watery parts it contained, in its passage, and come over perfectly pure and free from phlegm. But these instruments are built upon erroneous principles, their extravagant height defeating the end it was designed to answer: if the liquor is made to boil, a considerable quantity of mere phlegm will come over along with the spirit; and if the heat is not raised to this pitch, neither phlegm nor spirit will distil. The most convenient instrument is the common still, betwixt the body of which and its head an adopter or copper tube may be fixed.

The spirit being washed, as above directed, from its foul oil, and freed from the greatest part of the phlegm by gentle distillation in a water-bath; add to every gallon of it a pound or two of pure, dry, fixt alkaline salt. Upon digesting these together for a little time, the alkali, from its known property of attracting water and oils, will imbibe the remaining phlegm, and such part of the disagreeable unctuous matter as may still be left in the spirit, and sink with them to the bottom of the vessel. If the spirit be now again gently drawn over, it will arise entirely free from its phlegm and nauseous flavour; but some particles of the alkaline salt are apt to be carried up with it, and give what the workmen call an urinous relish: this may be prevented by adding, previous to the last distillation, a small proportion of calcined vitriol, alum, or sal catharticus amarus; the acid of these salts will unite with, and neutralize the alkali, and effectually prevent it from arising; while no more of the acid of the salts is extricated than what the alkali absorbs.

The spirit obtained by this means is extremely pure, limpid, perfectly

ly flavourless, and fit for the finest purposes. It may be reduced to the strength commonly understood by proof, by mixing twenty ounces of it (by weight) with seventeen ounces of water. The distilled cordials made with these spirits prove much more elegant and agreeable, than when the common rectified or proof spirits of the shops are made use of.

If the rectified spirit be distilled afresh from dry alkaline salt, with a quick fire, it brings over a considerable quantity of the salt; and in this

state is supposed to be a more powerful menstruum for certain substances than the pure spirit. This alkalized spirit is called TARTARIZED SPIRIT OF WINE.

The general virtues of vinous spirits have been already mentioned in the preceding part: the spirits impregnated with the volatile oils of vegetables, to be treated of in this chapter, have joined to those, the aromatic, cordial, or other virtues which reside in the oils.

ARTICLE I. *Distilled Spirits.*

AQUA MELISSÆ COMPOSITA.

Compound balm water, commonly called Eau de carmes.

Take of

Balm in flower, fresh gathered and cleared from the stalks, two pounds;

Lemon-peel, fresh, as soon as pared from the fruit, four ounces;

Coriander seeds, eight ounces;

Nutmegs,

Cloves,

Cinnamon, each, bruised, two ounces;

Angelica roots, dried and bruised, one ounce;

Spirit of wine, highly rectified, ten pints.

Steep the several ingredients in the spirit four or five days; and then draw off, in the heat of a water-bath, ten pints. Rectify the distilled liquor by a second distillation in a water-bath, drawing off only about eight pints and three quarters.

THIS process is taken from the *Elémens de Pharmacie* of M. Beaumé, who observes, that all the aromatic spirits ought to be prepared in the same manner. When the common

spirits of this kind are rubbed on the hands, &c. they leave, after the more volatile parts have exhaled, a disagreeable empyreumatic smell; and when diluted with water, and taken medicinally, they leave in like manner a nauseous flavour in the mouth. To remedy these imperfections, he made many experiments, which showed, that in order to obtain these liquors of the desirable qualities, the spirit must not only be perfectly pure at first, but that the liquor ought also to be rectified after it has been distilled from the subjects. In this rectification, only the more volatile, subtile, aromatic parts of the ingredients arise: there remains behind a white liquor, acrid, bitter, loaded only with the grosser oil, and deprived of all the specific flavour of the subjects. Indeed the very imperfection complained of, naturally points out this second distillation for the remedy; as it shows the spirit to contain a grateful and ungrateful matter, the first of which exhales while the other is left behind. The author says, that when the *aqua melissæ* is prepared as above directed, it has something in it more perfect than any of the odori-
ferous

ferous spirits whose excellence is cried up, and which have the reputation of being the best.

Aromatic spirituous liquors have in general less smell, when newly distilled, than after they have been kept about six months. M. Baumé suspects that the preparations of this kind which have been most in vogue, were such as have been thus improved by keeping; and found that the good effects of age might be produced in a short time by means of cold. He plunges quart bottles of the liquor into a mixture of pounded ice and sea-salt: the spirit, after having suffered, for six or eight hours, the cold hence resulting, proves as grateful as that which has been kept for several years. Simple waters also, after being frozen, prove far more agreeable than they were before, though they are always less so than those which have been drawn with spirit, and exposed to a like degree of cold. This melioration of distilled waters by frost was taken notice of by Geoffroy, *Hist. Acad.* 1713.

SPIRITUS ROSISMARINI.

Spirit of rosemary.

Lond.

Take of

Rosemary tops, fresh gathered, a pound and a half;

Proof-spirit, one gallon.

Distil in the heat of a water-bath till five pints are come over.

Edinb.

* Take of

Flowering tops of rosemary, fresh gathered, two pounds;

Rectified spirit of wine, eight pounds.

Distil in the heat of boiling water till seven pounds are come over.

A SPIRIT similar to this is generally brought to us from abroad, under the name of Hungary water.

This spirit is very fragrant, inso-much as to be in common use as a perfume: that brought from abroad is superior in fragrance to such as is generally made among us. In order to prepare it in perfection, the vinous spirit should be extremely pure; the rosemary tops gathered when the flowers are full blown upon them, and committed immediately to distillation, particular care being taken not to bruise or press them. The best method of managing the distillation, is that formerly recommended for the distillation of the more volatile essential oils and simple waters, viz. first to place the spirit in the still, and then set in, above the liquor, either an iron hoop, with a hair-cloth stretched over it, upon which the flowers are to be lightly spread, or rather a basket, supported on three pins, reaching down to the bottom. A gentle heat being applied, just sufficient to raise the spirit, its vapour, lightly percolating through the flowers, will imbibe their finer parts, without making that disagreeable alteration, which liquors applied to such tender subjects, in their grosser form, generally do. Probably the superiority of the French Hungary water, to that prepared among us, is owing to some skilful management of this kind, or that recommended for the foregoing preparation, and employing a perfectly pure spirit.

In the Wirtemberg pharmacopœia, some sage and ginger are added, in the proportion of half a pound of the former, and two ounces of the latter, to four pounds of the rosemary.

SPI-

SPIRITUS LAVENDULÆ SIMPLEX.

Simple spirit of lavender.
Lond.

Take of
Lavender flowers, fresh gathered,
a pound and a half;
Proof-spirit, one gallon.
Draw off, by the heat of a water-
bath, five pints.

Edinb.

Take of
Flowering spikes of lavender,
fresh gathered, two pounds;
Rectified spirit of wine, eight
pounds.
Draw off by the heat of boiling wa-
ter, seven pounds.

THE same cautions are to be ob-
served here as in the distillation of
the foregoing spirit. Both of them,
when made in perfection, are very
grateful and fragrant: they are fre-
quently rubbed on the temples, &c.
under the notion of refreshing and
comforting the nerves; and like-
wise taken internally, to the quan-
tity of a tea-spoonful, as warm cor-
dials.

SPIRITUS LAVENDULÆ COMPOSITUS.

Compound spirit of lavender.
Lond.

Take of
Simple spirit of lavender, three
pints;
Spirit of rosemary, one pint;
Cinnamon,
Nutmegs, each half an ounce;
Red Saunders, three drams.
Digest them together, and then
strain out the spirit for use.

Edinb.

Take of
Simple spirit of lavender, three
pounds;

1

Simple spirit of rosemary, one
pound.

Cinnamon, one ounce;

Cloves, two drams;

Nutmeg, half an ounce;

Red Saunders, three drams.

Macerate seven days, and strain.

THE red Saunders is of no farther
use in these compositions, than as a
colouring ingredient. If a yellow
spirit was liked, the yellow Saunders
would be an excellent article, as it
not only communicates a fine co-
lour, but likewise a considerable
share of medicinal virtue. A spirit
distilled from the flowers of lavender
and sage, in due proportion, and
digested in the cold for a little time
with some cinnamon, nutmegs, and
yellow Saunders, proves a very ele-
gant and grateful one. Where es-
sential oils are employed, particular
care must be had in the choice of
them; for on their goodness that of
the medicine depends. The dige-
stion of the spirit with the spices,
&c. should be performed without
heat, otherwise the flavour of the
medicine will be injured.

All these spirits are grateful re-
viving cordials: though consider-
ably more simple, they are not less
elegant or valuable, than many other
more elaborate preparations. This
medicine has long been held in great
esteem, under the name of PALSY
DROPS, in all kinds of languors,
weakness of the nerves, and decays
of age. It may be conveniently ta-
ken upon sugar, from ten to eighty
or a hundred drops.

AQUA ODORIFERA.

*An odoriferous spirit, called sweet
honey water.*

Take of

Coriander seeds,

Honey, each one pound;

Cloves, an ounce and a half;

Nut-

Nutmegs,
Banzoine,
Storax, each an ounce;
Vanelloes, in number four;
Yellow rind of three lemons:
French brandy, one gallon.

Digest these ingredients together for forty-eight hours; and then distil off the spirit in balneo marie. To one gallon of this spirit add,

Orange-flower water,
Rose water, of each one pound and a half;
Ambergris,
Musk, of each five grains.

First grind the musk and ambergris with some of the water, and afterwards put all together in a large matrafs; shake them well, and let them circulate for three days and nights in a gentle heat; then suffer them to cool, filtre the liquor, and keep it close stopt up for use.

THIS composition is designed rather as a perfume than as a medicine; though for such as can bear its fragrance, it might be used to advantage in this last intention. The musk and ambergris do not communicate so much of their smell as might be expected; and serve chiefly to heighten the flavour of the other ingredients; which these perfumes excellently do, when employed in very small proportion, to all the odoriferous simples, without imparting any thing perceptible of their own. A few drops of this spirit give a fine flavour to a large quantity of other liquor. Mr Wilson, from whom it is taken (*Pract. Chem.* pag. 354.) tells us, that he often made it for king James II. and that it gives one of the most pleasant scents that can be smelt to.

SPIRITUS COCHLEARIÆ.

Spirit of scurvygrafs.

Edinb. +

Take of

Fresh scurvygrafs, bruised, ten pounds;

Rectified spirit of wine, five pints.

Steep the herb in the spirit for twelve hours; then with the heat of a water-bath, distil off five pints.

THIS spirit is very strong of the scurvygrafs; and may be given, in those cases where the use of this herb is proper, from twenty to one hundred drops. The virtues of scurvygrafs reside in a very subtil, volatile oil, which arises in distillation both with water and pure spirit; and if the liquors are exposed to the air, soon exhales from both. The spirit, newly distilled, is extremely pungent; but if long kept, even in close vessels, becomes remarkably less so: 'But it is not probable, that with such a pungent vehicle we can use a sufficient quantity of the herb to produce any permanent or considerable effect; it has been much recommended as a diuretic in drop-sies.'

The makers of this spirit have frequently added to the scurvygrafs a quantity of horseradish root, and sometimes substituted to it one drawn entirely from the horseradish: the flavour of these two simples being so much alike, that their distilled spirits are scarce distinguishable from one another. Here it may be observed, that tho' *arum* and *dracunculus* are usually ranked in the same class with the two foregoing vegetables, and looked upon as similar to them; this process discovers a remarkable difference: whilst the former yield all their pungency in distillation both to water and spirit, the latter give over nothing to either, and yet their virtues

virtues are destroyed in the operation.

AQUA ANHALTINA.

Anhalt water.

Take of

Turpentine, six ounces;
Olibanum, one ounce;
Aloes wood, three ounces;
Cloves,
Cinnamon,
Cubebs,
Rosemary flowers,
Galangal,
Mastic,
Nutmegs, each, six drams;
Saffron, two drams and a half;
Bay berries,
Fennel seeds, each half an ounce;
Spirit of wine, five pints.

Pulverise those ingredients which require such treatment, and digest the whole with the spirit for six days; then distil with an exceeding gentle heat in balneo mariz: the liquor which runs clear is to be separated from the turbid, and kept by itself.

Where the addition of musk is required, fifteen grains thereof are

to be tied in a bag, and suspended in the head of the still.

WE have inserted this composition from the Brandenburg pharmacopœia, on account of its being held, in some places, in great esteem. It is rubbed on weak or paralytic limbs, against catarrhs, old pains, and aches, &c. and likewise given internally, in doses of half an ounce, for strengthening the stomach, dissolving flatulences, relieving colicky pains, and promoting the uterine purgations. It is very unpleasant to the palate; the aromatics, though sufficiently numerous, and in considerable quantity, not giving over near enough to cover the strong flavour of the turpentine; there are not many of them, indeed, that give over any thing considerable at all. A more elegant spirit of this kind might be prepared from turpentine, rosemary, lavender, and sage flowers; or by distilling the spirit first from the turpentine alone, and then dissolving in it a proper quantity of any suitable essential oils.

ARTICLE II. *Distilled Spirituous Waters.*

By *distilled spirits* are understood such as are drawn with a spirit that has been previously rectified, or which is reduced nearly to that strength in the operation; by *spirituous waters*, those in which the spirit is only of the proof strength, or contains an admixture of about an equal measure of water. These last have been usually called compound waters, even when distilled from one ingredient only; as those, on the other hand, which are drawn by common water, though from a number of ingredients, are named simple; the title *simplex*, here, relating not to simplicity in respect of composition, but to the vehicle being

plain water. The Edinburgh Pharmacopœia denominates those waters simple which are drawn from a single ingredient, whether the vehicle be common water or spirituous water, and all those compounds which are distilled from more than one.

General rules for the DISTILLATION of SPIRITUOUS WATERS; from the Edinburgh Pharmacopœia.

I.

The plants and their parts ought to be moderately and newly dried, except such as are ordered fresh gathered.

II.

II.

After the ingredients have been steeped in the spirit for the time prescribed, add as much water as will be sufficient to prevent an empyreuma, or rather more.

The liquor which comes over first in the distillation, is by some kept by itself, under the title of spirit; and the other runnings, which prove milky, fined down by art. But it is better to mix all the runnings together, without fining them, that the waters may possess the virtues of the plant entire; which is a circumstance to be more regarded than their fineness or sightliness.

If the distillation is skilfully managed, the heat equable, and all along gentle, and no more drawn off than the quantity directed, most of the waters will appear sufficiently bright and fine; some of them, which look turbid just after they are drawn, will, on standing for a few days, become clear and transparent. The practice here forbid, of saving some of the first runnings apart, is certainly very injurious to the composition; the water being not only robbed by it of some of the more volatile parts of the ingredients, but likewise rendered permanently milky, as wanting the spirit which, by dissolving the oil of the ingredients that gives this appearance, would make the liquor transparent. Nor is the method of fining the turbid waters by alum, &c. less culpable; for these additions produce their effects only by separating from the liquor what it had before gained from the ingredients.

III.

In the distillation of these waters, the genuine brandy obtained from wine is directed. Where this is not to be had, take instead of that proof-spirit, half its quantity of a well rectified spirit prepared

from any other fermented liquors; in this steep the ingredients, and then add spring-water enough, both to make up the quantity ordered to be drawn off, and to prevent burning.

By this method more elegant waters may be obtained, than when any of the common proof-spirits, even that of wine itself, are made use of. All vinous spirits receive some flavour from the matter from which they are extracted; and this flavour, which adheres chiefly to the phlegm or watery part, they cannot be divested of, without separating the phlegm, and reducing them to a rectified state.

AQUA ABSINTHII COMPOSITA.

Compound wormwood water.

Take of

Calamus aromaticus,
Orange-peel, fresh,
Cinnamon, each four ounces;
Roman wormwood, half a pound;
Mint, three ounces;
Lesser cardamoms,
Mace, each one ounce;
French brandy, two gallons.

Having bruised the seeds and spices, and cut the other ingredients, pour on them the brandy, and after steeping them together for the space of four days, distil off two gallons.

THIS water was formerly prescribed as a stomachic, along with bitter infusions; and for this purpose it is the least unfit (as being the most elegant and least unpleasant) of all the wormwood waters that the shops were furnished with. It is nevertheless too ungrateful an addition to the fine bitters of our new pharmacopœias; and cannot be supposed to contribute any thing to their virtue, which more agreeable spirituous waters would not equally do. Some have expected wormwood wa-

C c

ter

ter to be itself a bitter; but only the smell and flavour of the wormwood arises in this process, those parts in which its bitterness resides remaining behind in the still.

In former editions of the London Pharmacopœia there were two wormwood waters, which by some are still held in esteem, and were proposed by the committee of the College to be continued at the late revival, with some amendments.

AQUA CARVI SPIRITUOSA.

Spirituos caraway water.
Edinb.

Take of

Caraway seeds, half a pound;
Proof-spirit, nine pounds.

Macerate two days in a close vessel; then pour on as much water as will prevent an empyreuma, and draw off by distillation nine pounds.

In the same manner may be prepared nine pounds of spirituous distilled waters, from

Cinnamon, one pound;
Peppermint leaves, a pound and a half;
Nutmeg, well beat, two ounces;
Jamaica pepper, half a pound.

AQUA ALEXETERIA SPIRITUOSA.

Spirituos alexeterial water.
Lond.

Take of

Spearmint leaves, fresh, half a pound;
Angelica leaves, fresh,
Sea wormwood tops, fresh, each four ounces;
Proof-spirit, one gallon;
Water, as much as will prevent burning.

Distil off one gallon.

THIS is a tolerably pleasant water; it is looked upon as an alexipharmac and stomachic; and in these

intentions is not unfrequently made use of in juleps, &c.

AQUA ALEXETERIA SPIRITUOSA cum ACETO.

Spirituos alexeterial water with vinegar.
Lond.

Take of

Spearmint leaves,
Angelica leaves, each half a pound;
Sea-wormwood tops, four ounces;
Proof-spirit, one gallon;
Water, as much as is sufficient to prevent burning;
Vinegar, one pint.

Distil the fresh herbs with the spirit and water, drawing off one gallon; to which add the vinegar.

ANGELICA, after trial of sundry other materials, has been found the most effectually to remove the disagreeable flavour which the vinegar would otherwise communicate, and therefore this plant is ordered in a larger proportion here than in the other alexeterial waters. Perhaps it would be more eligible to add the vinegar occasionally; for when mixed with the liquor at first, it is apt to throw down, upon keeping, some of the more valuable parts which the water received from the herbs.

These waters, and likewise the aqua theriacalis in former editions of the Edinburgh Pharmacopœia, are scarcely ever employed in modern practice; and those who have employed them for the purposes signified by their title, have often been disappointed, and as frequently been led to doubtful or baneful practice.

AQUA EPIDEMICA.

Plague water.
Edinb. +

Take of

Masterwort roots, a pound and a half;

Angelica

Angelica seed,
Elder flowers, each half a pound;
French brandy, three gallons.
Digest for two days, then distil off
two gallons and a half; to which
add half a gallon of distilled vi-
negar.

THE foregoing compositions are
the only distilled waters in which
the heat of the spirit is tempered by
the addition of vinegar, an ingre-
dient which renders them service-
able in many cases where spirituous
liquors alone would be improper.
‘They were formerly’ held in great
esteem as sudorifics and alexiphar-
mics.

AQUA SEMINUM ANISI COMPOSITA.

Compound aniseed water.
Lond.

Take of

Aniseeds,
Angelica seeds, each half a pound;
Proof-spirit, one gallon;
Water, as much as is sufficient to
prevent burning.
Draw off by distillation one gallon.

THIS is a very elegant aniseed
water, the angelica seeds greatly im-
proving the flavour of the anise: it
is apt to turn out milky, if drawn
so low as here ordered.

AQUA CORTICUM AURAN- TIORUM SPIRITUOSA.

Spirituous orange-peel water.
Lond.

Take of

Outer rind of Seville orange-peel,
dried, half a pound;
Proof-spirit, one gallon;
Water, as much as is sufficient to
prevent an empyreuma.
Distil off one gallon.

THIS is considerably stronger of
the orange-peel than the simple wa-

ter. It is used as a cordial, stoma-
chic, and carminative.

AQUA BRYONÆ COMPOSITA.

Compound bryony water.

Take of

Bryony roots, one pound;
Wild valerian root, four ounces;
Pennyroyal,
Rue, each half a pound;
Mugwort leaves,
Feverfew flowers,
Savin tops, each one ounce;
Orange-peel, fresh,
Lovage seed, each two ounces;
French brandy, two gallons and a
half.

Having cut or bruised those ingre-
dients which require such treat-
ment, steep them in the brandy
four days; then draw off by distil-
lation two gallons and a half of
liquor.

THIS composition, designed as an
antihysterical, is liable to consider-
able objections, not only in regard
to its particular ingredients, but to
the medicinal intention of the whole.
Many, by the use of this and other
like waters, under the notion of me-
dicines, have been betrayed into the
pernicious habit of drinking drams:
whereas, however spirituous liquors
may give a temporary relief to the
languors of hysterical and hypo-
chondriacal persons, none suffer so
soon the ill effects attending the
constant use of them. The unplea-
sant flavour of this water renders it
exceptionable also as a vehicle of o-
ther antihysterical medicines, which,
in general, are of themselves suffi-
ciently ungrateful: a small augmen-
tation in the dose of the medicines
themselves (as the London commit-
tee observe) would abundantly com-
pensate any assistance to be expec-
ted from this water, and leave room
for the use of a more agreeable ve-
hicle.

The colleges have therefore wholly omitted this water, without giving any thing of similar intention in its place. The following is less exceptionable, but might also perhaps be very well spared out of the shops:

AQUA VALERIANÆ COMPOSITA.

Compound valerian water.
Edinb. +

Take of

Wild valerian root, a pound and a half;
Lovage seed, half a pound;
Pennyroyal leaves, four ounces;
Savin tops, two ounces;
French brandy, two gallons.

Digest for two days, and then draw off by distillation two gallons.

AQUA SEMINUM CARDAMOMI.

Cardamom-seed water.
Lond.

Take of

Lesser cardamom seeds, freed from the husks, four ounces;
Proof-spirit, one gallon;
Water, as much as is sufficient to prevent burning.

Distil off one gallon.

THIS water is a grateful cordial and carminative, the cardamom seeds giving over in this process the whole of their flavour. It is not, perhaps, very necessary to be at the trouble of separating the husks, for these communicate nothing disagreeable: the only difference is, that if employed unhusked, a proportionably larger quantity of them must be taken.

AQUA SEMINUM CARUI.

Caraway water.
Lond.

Take of

Caraway seeds, half a pound;
Proof-spirit, one gallon;

Water, as much as will prevent burning.
Distil off one gallon.

THIS is a cordial in common use: it contains the flavour of the caraway seeds in perfection.

AQUA CINNAMOMI SPIRITUOSA.

Spirituous cinnamon water.
Lond.

Take of

Cinnamon, a pound;
Proof-spirit, a gallon;
Water, so much as will prevent burning.

Draw off by distillation one gallon.

THIS is a very agreeable and useful cordial water, but not so strong of the cinnamon as might be expected; for very little of the virtues of the spice arises till after the pure spirituous part has distilled. Hence in the former editions of the London Pharmacopœia, the distillation was ordered to be protracted till two pints more than here directed were come over. By this means, the whole virtue of the cinnamon was more frugally than judiciously obtained; for the disagreeable flavour of the feints of proof-spirits, and the acidulous liquor arising from cinnamon as well as other vegetables when their distillation is long continued, give an ill relish to the whole; at the same time that the oil which was extracted from the spice was by this acid thrown down.

In the Pharmacopœia Reformata, it is proposed to make this water by mixing the *aqua cinnamomi simplex* with somewhat less than an equal quantity of rectified spirit: on shaking them together, the liquor loses its milky hue, soon becomes clear, and more elegant than the water distilled as above: it is equally strong of the cinnamon, and free from the nauseous

nauseous taint which the common proof-spirits are impregnated with.

AQUA JUNIPERI COMPOSITA.

Compound juniper water.
Lond.

Take of

Juniper berries, one pound;
Sweet fennel seeds,
Caraway seeds, each an ounce and
a half;
Proof-spirit, one gallon:
Water, as much as is sufficient to
prevent burning.
Distil off one gallon.

Edinb

Take of

Juniper berries, well bruised, one
pound;
Seeds of caraway,
sweet fennel, of each an
ounce and a half;
Proof-spirit, nine pounds.
Macerate two days; and having ad-
ded as much water as will prevent
an empyreuma, draw off by distil-
lation nine pounds.

THIS water mixed with about an equal quantity of the rob of juniper berries, proves an useful medicine in catarrhs, debility of the stomach and intestines, and difficulty of urine. The water by itself is a good cordial and carminative: the service which this and other spirituous waters do in these intentions, is too commonly known; though the ill consequences that follow their constant use, are too little regarded.

AQUA MENTHÆ PIPERITI- DIS SPIRITUOSA.

Spirituous peppermint water.
Lond.

Take of

Peppermint leaves, dry, a pound
and a half;
Proof-spirit, a gallon;

Water, as much as is sufficient to
prevent an empyreuma.
Draw off by distillation one gallon.

THIS water is made use of in fla-
tulent colics and other like disor-
ders; in which it oftentimes gives
immediate relief. It smells and tastes
strongly of the peppermint.

AQUA MENTHÆ VULGA- RIS SPIRITUOSA.

Spirituous spearmint water.
Lond.

Take of

Spearmint leaves, dry, a pound
and a half;
Proof-spirit, a gallon;
Water, as much as will prevent
burning.
Distil off one gallon.

THIS water, if the spirit be good, turns out a very elegant one, and preferable, in weakness of the stomach, retching to vomit, and the like, to many more elaborate preparations. Where the disorder is not accompanied with heat or inflammation, half an ounce of this water may be given diluted with some agreeable aqueous liquor.

AQUA MIRABILIS.

Take of

Cinnamon, two ounces;
Lemon-peel, one ounce;
Angelica seeds,
Lesser cardamom seeds,
Mace, each half an ounce;
Cubebs, two drams:
Balm leaves, six ounces;
French brandy, one gallon.
Pour the brandy on the other ingre-
dients bruised; and after digest-
ing them for four days, draw off
by distillation one gallon.

THE above composition of this celebrated water is that which was formerly followed. At the late re-

formation it has received a considerable improvement; the cardamoms, cubebs, and balm, are omitted, and an addition of peppermint introduced. The formula at present is as follows:

**AQUA AROMATICA, vulgo
MIRABILIS.**

*Aromatic water, commonly called
Aqua mirabilis.
Edinb. +*

Take of

Cinnamon, two ounces;
Fresh yellow rind of lemons,
Angelica seeds, each one ounce;
Mace, half an ounce;
Peppermint, three ounces;
French brandy, one gallon.

Digest for two days, and then distil off one gallon.

THIS water is very rich of the spices; and proves a pleasant, warm cordial and carminative. In those who have not, by frequent use, deprived themselves of the benefit of these kinds of liquors, it often gives present relief in languors, flatulences, colicky pains, and other like complaints.

The spices in these two compositions being rather too dear for the purposes of a common cordial water, the wholesale dealers, as I have been informed, generally substitute to them a cheaper spice from our own plantations, Jamaica pepper. A very elegant water is prepared also from that spice by itself in the following proportions:

**AQUA PIPERIS JAMAICENSIS SPI-
RITUOSA.**

Spirituuous Jamaica pepper water.

Take of

Jamaica pepper, half a pound;
Proof-spirit, three gallons;
Water, a sufficient quantity to prevent an empyreuma.

Draw off by distillation three gallons.

THIS water is far more agreeable than a simple water drawn from the same spice; and has long had a place among the cordials both of the distiller and apothecary; though it has not yet been received into any public pharmacopœia.

AQUA NUCIS MOSCHATE.

*Nutmeg water.
Lond.*

Take of

Nutmegs, two ounces;
Proof-spirit, a gallon;
Water, as much as will prevent burning.

Draw off by distillation one gallon.

THIS water (with the addition only of some hawthorn flowers, an article of very little significance) was formerly celebrated in nephritic disorders, under the name of AQUA NEPHRITICA. At present, it is regarded only as an agreeable spirituous liquor, lightly impregnated with the nutmeg flavour.

AQUA POEONIE COMPOSITA.

Compound peony water.

Take of

Peony-roots, two ounces;
Wild valerian roots, an ounce and a half;
White dittany root, one ounce;
Peony seeds, six drams;
Lillies of the valley, fresh, four ounces;
Lavender flowers,
Rosemary flowers, each two ounces;
Betony,
Majoram,
Rue,
Sage, tops of each, one ounce;
French brandy, a gallon and a half.

Cut

Cut or bruise those materials that require such treatment, steep them four days in the brandy, and then distil over a gallon and a half of liquor.

THIS water was formerly distinguished by the title of *AQUA ANTI-EPILEPTICA*, and recommended in all kinds of epilepsies and nervous complaints. For some time past it has had little regard paid to it, having rarely been prescribed any otherwise than as a vehicle, and as such not often. The ingredients from which it receives its name, the peony roots and seeds, communicate little or nothing to the water; whatever virtues these are possessed of, remain behind in the decoction; nor are these the only exceptionable articles; the dittany, betony, and some others, though of the aromatic kind, afford so little, as not to deserve a place among more powerful materials.

The above formula is taken from 'a former edition of the Edinburgh Pharmacopœia.' It is here inserted, for the sake of those who may still have some regard for forms so long received.

AQUA PULEGII SPIRITUOSA.

Spirituous penny-royal water.
Lond.

Take of

Penny-royal leaves, dry, a pound and a half;

Proof-spirit, a gallon;

Water, as much as will prevent burning.

Distil off one gallon.

THIS water has a good share of the flavour of the penny-royal, and is pretty much in use as a carminative and antihysterick.

AQUA RAPHANI COMPOSITA.

Compound horseradish water.
Lond.

Take of

Garden scurvygrass leaves, fresh, four pounds;

Horseradish root, fresh,

Orange-peel, fresh, each two pounds;

Nutmegs, nine ounces;

Proof-spirit, two gallons;

Water, sufficient quantity to prevent burning.

Draw off by distillation two gallons.

Edinb. +

Take of

Horseradish root,

Garden scurvygrass, fresh, each three pounds;

Orange-peel, fresh,

Juniper berries,

Canella alba, each four ounces;

French brandy, three gallons.

Steep the juniper berries and canella alba in the spirit for two days; then add the other ingredients, and draw off three gallons.

BOTH these waters are very elegant ones, and as well adapted for the purposes of an antiscorbutic as any thing that can well be contrived in this form. The committee of the London college observe, with regard to the first, that the horseradish and scurvygrass join very well together, giving a similar flavour, though not a little disagreeable; that the nutmeg suppresses this flavour very successfully without superadding any of its own; and to this, orange-peel (no incongruous ingredient to the intention of the medicine) adds a flavour very agreeable. Arum root has generally had a place in this water, but is here deservedly thrown out; for it gives nothing of its pungency over the

helm, notwithstanding what is asserted, by some dispensatory-writers, to the contrary. Mustard seed, though not hitherto, that I know of, employed in these kinds of compositions, should seem to be an excellent ingredient; it gives over the whole of its pungency, and is likewise less perishable than most of the other substances of this class: this seed wants no addition, unless some aromatic material to furnish an agreeable flavour.

AQUA VULNERARIA, seu AQUA
CATAPULTARUM.

Arquebuse water.

Pharm. Argent.

Take of

Comfrey, leaves and root,
Sage,
Mugwort,
Bugloss, each four handfuls;
Betony,
Sanicle,
Ox-eye daisy,
Common daisy,
Greater figwort,
Plantane,
Agrimony,
Vervain,
Wormwood,
Fennel, each two handfuls;
St John's wort,
Long birthwort,
Orpine,

Veronica,
Lesser centaury,
Milfoil,
Tobacco,
Moufe-ear,
Mint,
Hyssop, each one handful;
Wine, twenty-four pounds.

Having cut and bruised the herbs, pour on them the wine, and let them stand together in digestion, in horfedung, or any other equivalent heat, for three days; afterwards distil in an alembic with a moderate fire.

THIS celebrated water has been for some time held in great esteem, in contusions, for resolving coagulated blood, dissolving the tumours that arise on fractures and dislocations, for preventing the progress of gangrenes, and cleansing and healing ulcers and wounds, particularly gun-shot wounds. Mr Lemery has been at the pains of writing a whole treatise on it; in which he considers each of the ingredients singly, and supposes the water to possess their united virtues. In this, however, he is mistaken; for the virtues of most of the herbs, admitting them to be as great as he would have them, reside in such parts as are not capable of being elevated in this process.

C H A P. VI.

CONCENTRATION of the Medicinal Parts of JUICES and INFUSIONS by EVAPORATION.

WHEN vegetable juices, or watery or spirituous decoctions or infusions, are exposed to a continued heat; the fluid gradually evaporating, carries off with it such volatile matters as it was impregnated with, and leaves the more fixed united together into one mass. As the object of the preceding chapter was the collection of the volatile principle which exhales along with the fluid, that of the present is this reunion and concentration of the fixed matter. The mass which remains from the evaporation of the expressed juice of a plant is called *inspissated juice*; from watery decoctions or infusions, an *extract*; from spirituous tinctures, a *resin*, or *essential extract*. The term *extract* is frequently used also as a general appellation of all the three kinds. Inspissated juices and watery decoctions, particularly the former, when evaporated no further than to the consistence of oil or honey, are called *rob* or *sapa*; and spirituous tinctures, reduced to a like consistence, are called *balsam*.

S E C T. I.

INSPISSATED JUICES

WHAT relates to the expression of juices, has already been delivered in Chap. ii. with the most effectual means of preserving them in their liquid state, and a general account of what substances do or do not give out their virtues with their juices. In the inspissation of juices there is further to be considered the

volatility or fixity of their medicinal parts: if a plant loses its virtue, or part of its virtue, in being dried, it is obvious that the juice must lose as much in being inspissated to dryness; how gentle soever the heat be with which the inspissation is performed. It is likewise to be observed, that the medicinal parts of some

some juices are kept in a state of perfect solution by the watery fluid, so as to be completely retained by it after the liquor has been made fine by settling, straining, or other means; while the medicinal parts of others, not dissoluble by watery menstrua, are only diffused thro' the liquor in the same manner as the feculencies are, and separate along with these on standing.

SUCCI SPISSATI, vulgo EXTRACTA.

Inspissated juices, commonly called Extracts.

SUCCUS SPISSATUS ACONITI.

*Inspissated juice of wolfsbane.
Edinb.*

* Bruise the fresh leaves of aconitum; and including them in a hempen bag, strongly compress them in a press, so that they may give out their juice: let the juice be forthwith exhaled, in open vessels exposed to the vapour of boiling water, to the consistence of pretty thick honey: An empyreuma is to be avoided by constantly stirring towards the end of the process.

After the matter has become cold, let it be put up in glazed earthen vessels, and moistened with rectified spirit of wine.

* In the same manner are prepared inspissated juices of
Deadly nightshade.
Henbane.

ROB BACCARUM SAMBUCI.

*Rob of elder berries.
Lond.*

Let the depurated juice of elderberries be inspissated with a gentle heat.

SUCCUS SPISSATUS BACCARUM SAMBUCI, vulgo ROB SAMBUCI.

*Inspissated juice, commonly called Rob of elder berries.
Edinb.*

* Take of
Juice of ripe elder berries, five pounds;
Purest sugar, one pound.
Evaporate with a gentle heat to the consistence of pretty thick honey.

THIS preparation, made with or without sugar, keeps well, and proves a medicine of considerable importance as an aperient, generally promoting the natural excretions by stool, urine, or sweat. The dose is from a dram or two to an ounce or more. A spoonful, diluted with water, is usefully taken in common colds at bed-time.

SUCCUS PRUNORUM SILVESTRIUM, sive ACACIA GERMANICA.

*Inspissated juice of sloes, or German acacia.
Edinb. +*

Let any quantity of the juice of unripe sloes be inspissated over a gentle fire.

THIS juice is inspissated nearly to dryness, care being taken to prevent its burning, as directed in the following section for making extracts with water. It is a moderately strong astringent, similar to the Egyptian acacia, for which it has been commonly substituted in the shops. It is given in fluxes, and other disorders where styptic medicines are indicated, from a scruple to a dram.

EXTRACTUM PLANTAGINIS.

*Extract of plantane.**Edinb. +*

Let any quantity of the juice of plantane leaves be depurated; either by suffering it to settle, and then decanting off the clear liquor; or by straining; or by clarification with whites of eggs. Afterwards evaporate the juice in a sand-heat, to the consistence of honey.

After the same manner, extracts may be made from all acid, cooling, styptic, juicy plants.

THIS is a method of treating plants very little practised, but which promises, if duly prosecuted, to afford medicines of considerable power. There are many common and neglected herbs, as plantane, chickweed, chervil, &c. whose juices in their dilute state, as well as the herbs in substance, seem to be altogether insignificant, but which, when the juice is well depurated from the seculent matter, and concentrated by the evaporation of the fluid, yield extracts, which discover to the taste no small activity. These extracts, like those prepared from the juices of most of the summer fruits, if inspissated to dryness, grow moist again in the air.

ELATERIUM.

Lond.

Slit ripe wild cucumbers, and having very lightly pressed out the juices, pass it through a fine hair sieve into a glazed earthen vessel. After standing for some hours, the thicker part will fall to the bottom; from which the thinner is to be poured off, and what liquid matter is still left, is to be separated by filtration. The remaining thick part is to be covered with a linen cloth, and exposed

to the sun, or other gentle heat, till grown thoroughly dry.

WHAT happens in part in preparing the extract of hemlock, happens in this preparation completely, viz. the spontaneous separation of the medicinal matter of the juice on standing for a little time; and the case is the same with the juices of several other vegetables, as those of arum root, iris root, and bryony root. Preparations of this kind have been commonly called *fecula*. The filtration above directed, for draining off such part of the watery fluid as cannot be separated by decantation, is not the common filtration through paper, for this does not succeed here: The grosser parts of the juice, falling to the bottom, form a viscid cake upon the paper, which the liquid cannot pass through. The separation is to be attempted in another manner, so as to drain the fluid from the top: This is effected by placing one end of some moistened strips of woollen cloth, skains of cotton, or the like, in the juice, and laying the other end over the edge of the vessel, so as to hang down lower than the surface of the liquor: by this management the separation succeeds in perfection.

The Edinburgh Pharmacopœia + directs the wild cucumbers to be gathered before they have grown fully ripe; and no more of the juice to be taken, than that which issues spontaneously upon sitting them. After settling, the fluid part is ordered to be poured away; and the thick residuum, without any further draining or filtration, to be exsiccated in the sun.

THE juice of the unripe fruit is said to operate with greater violence than of that which is ripe. The foregoing prescriptions do not per-

perhaps differ so much in regard to the degree of maturity, as in the manner of expressing it; both seeming to intend the fruit to be taken just before it has grown so thoroughly ripe, as to burst and shed its juice on being touched. If any pressure is used, it should be exceedingly gentle; otherwise some of the inactive pulpy matter of the fruit will be forced out with the juice, and render the strength of the elaterium precarious; a point of primary consequence to be avoided, in a medicine of such powerful operation, and limited to so small a dose.

Elaterium is a strong irritating cathartic, and oftentimes operates also as an emetic. It is never to be ventured on but in indolent phlegmatic habits, as in dropsies, in which it is by some particularly recommended. Two or three grains are in general a sufficient dose.

SUCCUS SPISSATUS CICUTÆ.

Inspissated juice of hemlock.

Edinb.

Having expressed the juice of the leaves and stalks of hemlock when flowering, in the same manner as directed for that of the aconitum, evaporate it to the consistence of pretty thin honey; when it is cooled, add of the powder of the dried leaves of the plant as much as to make it into a mass fit for forming pills. Care, however, is to be taken, that the evaporation proceed to that length, so that as much of the powder can be mixed with the inspissated juice as shall make up about a fifth part of the whole mass.

A preparation similar to this was published at Vienna, by Dr Stork, who recommends it as a high resolvent in many obstinate disorders, where the common remedies avail nothing. He observes,

that small doses should always be begun with, as two grains, made into a pill twice a-day; and that by gradually increasing the dose, it may be given to two, three, or even four drams a-day, and continued in such quantities for several weeks: that it may be used with safety in infancy, old age, and pregnancy: that it neither accelerates nor disturbs the circulation; neither heats, nor cools, nor affects the animal functions: that it increases the secretions, and renders the mouth moist; seldom purges; very rarely vomits; sometimes augments perspiration; often produces a copious discharge of viscid urine; but in many patients does not increase any of the sensible evacuations: that it removes obstructions and their consequences; relieves rheumatic pains, though of long continuance; dissolves scirrhus tumours, both internal and external; and cures dropsies and consumptions proceeding from scirrhosities: that it often dissolves cataracts, or stops their progress, and has sometimes removed the gutta serena: that inveterate cutaneous eruptions, scald heads, malignant ulcers, cancers, the malignant fluor albus and gonorrhœa of long standing, obstinate remains of the venereal disease, and caries of the bones generally yield to it: that for the most part it is necessary to continue this medicine for a considerable time before the cure is effected, or much benefit perceived from it: that in some cases it failed of giving any relief; and that he met with some persons who could not bear its effects; and that consequently there must be some latent difference in the habit, the diagnostic signs of which are at present unknown: that though it is by no means infallible any more than other medicines in their respective intentions, yet the great number of deplorable cases

cases that have been happily cured by it, is sufficient to recommend it to further trials. The efficacy of this medicine is confirmed by many eminent practitioners abroad; tho' the trials hitherto made of it in this country have not been attended with much success. Somewhat, perhaps, may depend upon the time of the plant's being gathered, and the manner of the preparation of the extract. Dr Storck himself takes notice of some mistakes committed in this respect: some have left the herb in a heap for several days, whence part of it withered, part rotted, and the juice became thick and mucilaginous: others have taken a very large quantity of the juice, and boiled it down in copper vessels with a great heat; by which means a strong fetor was diffused to a considerable distance, and the most efficacious parts dissipated: others, with officious care, have clarified the juice, and thus obtained a black tenacious extract, retaining but a small degree of the specific smell of the plant. The extract, duly prepared, according to the above prescription, is of a greenish brown colour, and a very disagreeable smell, like that of mice. But though there is reason to believe that much of the extract used

here had been ill prepared, we can by no means admit that its general inefficacy was owing to this cause; for though there are few instances of its discovering any valuable medicinal powers, there are several of its having activity enough, even in small doses, to produce alarming symptoms.

'Modern practice, however, seems to hold a middle place; being neither influenced by the extravagant encomiums of Dr Storck, nor frightened by the wary suspicions of Dr Lewis. The inspissated juice of the hemlock is accordingly given with freedom in a great variety of complaints, without our experiencing the wonderful effects ascribed to it by the former, or the baneful consequences dreaded by the latter. Like other preparations of this valuable herb, it is no doubt a very useful addition to our Pharmacopœia; nor does its use seem to be more hazardous than that of opium and some other narcotics.

'The inspissated juices of the belladonna and hyoscyamus, like that of cicuta, possess the virtues of the herbs; and this form is obviously the best for concentrating and preserving their properties. See *BELLADONNA* and *HYOSCYAMUS*.'

S E C T. IV.

EXTRACTS WITH WATER.

THese extracts are prepared, by boiling the subject in water, and evaporating the strained decoction to a thick consistence.

This process affords us some of the more active parts of the plants, free from the useless indissoluble earthy matter, which makes the largest share of their bulk. There is a great difference in vegetable substances, with regard to their fit-

ness for this operation; some yielding to it all their virtues, and others scarce any. Those parts in which the sweet, glutinous, emollient, cooling, bitter, austere, astringent virtues reside, are for the most part totally extracted by the boiling water, and remain almost entire upon evaporating it: whilst those which contain the peculiar odour, flavour, and aromatic quality,

are

are either not extracted at all, or exhale alone with the menstruum. Thus gentian root, which is almost simply bitter, yields an extract possessing in a small volume the whole taste and virtues of the root. Wormwood, which has a degree of warmth and strong flavour joined to the bitter, loses the two first in the evapo-

ration, and gives an extract not greatly different from the foregoing: the aromatic quality of cinnamon is dissipated by this treatment, its astringency remaining; whilst an extract made from the flowers of lavender and rosemary, discovers nothing either of the taste, smell, or virtues of the flowers.

General Rules for making Extracts with Water.

1. It is indifferent, in regard to the medicine, whether the subject is used fresh or dry; since nothing that can be preserved in this process will be lost by drying. In regard to the facility of extraction, there is a very considerable difference; vegetables in general giving out their virtues more readily when moderately dried than when fresh.

2. Very compact dry substances should be reduced into exceeding small parts, previous to the affusion of the menstruum.

3. The quantity of water ought to be no greater than is necessary for extracting the virtues of the subject. A difference herein will sometimes occasion a variation in the quality of the product; the larger the quantity of liquor, the longer fire will be requisite for evaporating it, and consequently the more of the volatile parts of the subject will be dissipated. A long-continued heat likewise makes a considerable alteration in the matter which is not volatile. Sweet substances, by long boiling with water, become nauseous; and the drastic purgatives lose their virulence, though without any remarkable separation of their parts.

4. The decoctions are to be depurated by colature; and afterwards suffered to stand for a day or two, when a considerable quantity of sediment is usually found at the

bottom. If the liquor poured off clear, be boiled down a little, and afterwards suffered to cool again, it will deposite a fresh sediment, from which it may be decanted before you proceed to finish the evaporation. The decoctions of very resinous substances do not require this treatment, and are rather injured by it; the resin subsiding along with the inactive dregs.

5. The evaporation is most conveniently performed in broad shallow vessels; the larger the surface of the liquor, the sooner will the aqueous parts exhale: This effect may likewise be promoted by agitation.

6. When the matter begins to grow thick, great care is necessary to prevent its burning. This accident, almost unavoidable if the quantity is large, and the fire applied as usual under the evaporating pan, may be effectually secured against, by carrying on the inspissation after the common manner, no farther than to the consistence of a syrup, when the matter is to be poured into shallow tin or earthen pans, and placed in an oven, with its door open, moderately heated; which acting uniformly on every part of the liquid, will soon reduce it to any degree of consistence required. This may likewise be done, and more securely, in *balneo-marie*, by setting the evaporating vessel in boiling

boiling water; but the evaporation is here exceeding slow and tedious.

7. Extracts are to be sprinkled with a little spirit of wine, to prevent their growing mouldy [L.] They should be kept in bladders moistened with sweet oil [E.] +

EXTRACTUM GENTIANÆ.

Extract of gentian.

Edinb.

Take of

Gentian root, as much as you please.

Having cut and bruised it, pour upon it four times its quantity of water. Boil to the consumption of one half of the liquor; and strongly expressing it, strain. Evaporate the decoction to the consistence of pretty thick honey, in vessels exposed to the vapour of hot water.

* In preparing this and every other extract, it is necessary to keep up a constant stirring towards the end of the process, in order to prevent an empyreuma, and that the extract may be of an uniform consistence, and free of clots.

* In the same manner are prepared

Extract of the

roots of black hellebore.

leaves of the pulsatilla nigricans.

leaves of rue.

heads of white poppies.

seeds of hemlock, whilst not perfectly ripe.

* All the above extracts contain the virtues of the herbs in a state of tolerable perfection. The extract is the only preparation of the pulsatilla nigricans, and it seems sufficiently well suited to be brought

into this form. The extract of the white poppy-heads is not perhaps superior in any respect to opium; but to those who may think otherwise, it is convenient to preserve them in this form for preparing the syrup occasionally. The seeds of hemlock have by some been thought stronger, or at least that they produce giddiness sooner, than the leaves; but this extract has not hitherto come into general use.

EXTRACTUM ABSINTHII.

Extract of wormwood.

Edinb. +

Boil dried wormwood leaves in water, supplying fresh water occasionally, till the herb has given out all its virtues to the liquor. Strain the decoction through a woollen cloth, and evaporate it, in a sand-heat, to the consistence of honey.

This extract is almost simply bitter; the peculiar flavour of the wormwood being dissipated in the evaporation. The chemists usually prepare the extract of wormwood from the decoction which remains in the still after the distillation of the essential oil: And, provided the still has been perfectly clean, and the liquor not stood too long in it after the distillation, this piece of frugality is not to be disapproved of; since, whether we catch the exhaling vapour, or suffer it to be dissipated in the air, the remaining extract will be the same.

EXTRACTUM CENTAURII MINORIS.

Extract of lesser centaurry.

Edinb. +

This is directed to be prepared in the same manner as the preceding. It is the oldest extract we have any account of: its preparation is very accurately and circum-

stan-

stantially set down in a book usually ascribed to Galen, *de Virtute Centurææ*. The author of that treatise recommends the extract as a medicine of excellent service in many cases; and looks upon centaury as a specific against the bite of a mad dog and other venomous animals. It is doubtless an useful bitter, possessing the general virtues of the substances of that class; but cannot well be supposed to have any others.

EXTRACTUM CHAMÆMELI.

Extract of camomile.
Edinb. +

This extract is prepared from the flowers of camomile, in the same manner as those of the leaves of the two preceding plants. Nor is it greatly different from those extracts in quality; the specific flavour of the camomile exhaling in the evaporation. The chemists commonly prepare it, like that of wormwood, from the decoction remaining after the distillation of the essential oil.

EXTRACTUM ENULÆ CAMPANÆ.

Extract of elecampane.
Lond.

Boil the roots of elecampane in water; press out and strain the decoction, and set it by to settle. Then pour off the clear liquor, and boil it down to a pilular consistence; taking care towards the end to prevent its burning to the vessel.

This extract retains a considerable share of the virtues of the root: its taste is somewhat warm, and not ungratefully bitterish. It is given from a scruple to a dram, in a lax state of the fibres of the stomach, and in some disorders of the breast.

EXTRACTUM GENTIANÆ.

Extract of gentian.
Lond.

This extract is prepared from the roots of gentian, in the same manner as the foregoing extracts. It is of a reddish-brown colour, and an intensely bitter taste, being one of the strongest of the vegetable bitters.

EXTRACTUM GLYCYRRHIZÆ.

Extract of liquorice.
Lond.

Lightly boil fresh liquorice roots in water, press the decoction thro' a strainer, and after the feces have subsided, evaporate it until it no longer sticks to the fingers, taking care towards the end of the operation to prevent an empyreuma.

It is convenient, before boiling the root, to cut it transversely into small pieces, that it may more readily give out its virtues by light decoction. If the boiling is long continued, the rich sweet taste, for which this preparation is valued, will be greatly injured. For the same reason, the quantity of water ought to be no larger than is absolutely necessary to extract the virtues of the root: a quart, or at most three pints, will be fully sufficient for a pound of liquorice. It would be of considerable advantage to the preparation, and probably (when made in quantity) less expensive to the preparer, to use instead of the decoction juice of liquorice, pressed out betwixt iron rollers, after the manner practised abroad for obtaining the juice of the sugarcane.

Large quantities of extract of liquorice have been usually brought to us from Spain, and other foreign coun-

tries: but it is very rarely met with in the shops in perfection; the makers of this commodity, both at home and abroad, being either very slovenly in its preparation, or designedly mixing it with sand, and other impurities. When made with due care, it is exceedingly sweet, not at all bitterish or nauseous, more agreeable in taste than the root itself, of a pleasant smell, a reddish-brown colour, and when drawn out into strings, of a bright golden colour, totally soluble in water, without depositing any feces.

This preparation would be very convenient for many purposes in the shops, if kept in a somewhat softer consistence than that of an extract. The only inconvenience attending this soft form is, its being apt in a short time to grow mouldy: this may be effectually prevented by the addition of a small portion of spirit of wine.

'This extract is a very convenient vehicle to convey several medicines: it has been more especially employed to suspend the powder of the bark, and to reconcile that drug to the palate of children.'

EXTRACTUM HELLEBORI NIGRI.

Extract of black hellebore.

Lond.

This extract is prepared from the roots of black hellebore, in the same manner as that of elecampane roots, above described. It purges with considerably less violence than the hellebore in substance, and appears to be one of the best preparations of that root, when intended to act only as a cathartic. The dose is from eight or ten grains to fifteen or more.

EXTRACTUM LIGNI CAM- PECHENSIS.

Extract of logwood.

Lond.

Take of logwood, reduced to pow-

der, one pound. Boil it in a gallon of water till half the liquor is consumed, repeating the coction with fresh water four times, or oftener. The several decoctions are to be mixed together, passed through a strainer, and evaporated to a due consistence.

THIS wood very difficultly yields its virtue to watery menstrea, and hence the reducing it into fine powder is extremely necessary. The Edinburgh Dispensatory directs spirit of wine to be called in aid. See the following section.

The extract of logwood has been used for a considerable time in some of our hospitals, but is now first received into the Pharmacopœia. It has an agreeable sweet taste, with some degree of astringency; and hence becomes serviceable in diarrhœas, for blunting the acrimony of the juices, and moderately constringing the intestines and orifices of the smaller vessels: It may be given from a scruple to half a dram, and repeated five or six times a-day to advantage. During the use of this medicine, the stools are frequently tinged red by it, which has occasioned some to be alarmed as if the colour proceeded from blood: the prescriber therefore ought to caution the patient against any surprise of this kind.

EXTRACTUM CORTICIS PERUVIANI,

MOLLE ET DURUM.

Extract of Peruvian bark, soft and hard.

Lond.

Boil a pound of powdered bark in five or six quarts of water, for an hour or two, and pour off the liquor; which, whilst hot, will be red and transparent, but on growing cold becomes yellow and turbid. The remaining bark is to

D d be

be boiled again in the same quantity of water as before, and this process repeated till the liquor remains transparent when cold. All the decoctions, strained and mixed together, are to be evaporated over a gentle fire to a due consistence, care being taken to prevent the matter from burning.

THIS extract is directed to be kept in the shops, both in a soft and hard form; the first of a proper consistence for making into pills; the other fit for being reduced into powder.

Peruvian bark is a resinous drug: the resin melts out by the heat, but is not perfectly dissolved by the water; hence, in cooling, it separates, renders the liquor turbid, and in part falls to the bottom, as appears manifestly upon examining the sediment by spirit of wine (See the account of this article). This extract might be made to better advantage by the assistance of spirit of wine, after the same manner as that of jalap; and this method the Edinburgh College have directed. But, as the Committee observe, all the spirits which can be expected to be employed for this process among us, are accompanied with some degree of a bad flavour: this adheres most strongly to the phlegmatic part of the spirit, which evaporating last, must communicate this ill flavour to the extract; a circumstance of very great consequence, as this medicine is designed for such whose stomachs are too weak to bear a due quantity of bark in substance. Ten or twelve grains of the hard extract are reckoned equivalent to about half a dram of the bark itself.

EXTRACTUM LIGNI GUA- IACI, molle et durum.

*Extract of guaiacum wood, soft
and hard.*

Lond.

Boil a pound of shavings of guaia-

cum in a gallon of water till half the liquor is wasted, repeating the operation four times, or oftener, with the same quantities of fresh water. The several decoctions, passed through a strainer, are to be mixed and inspissated together; when the aqueous parts are almost entirely exhaled, a little rectified spirit of wine is to be added, that the whole may be reduced into an uniform and tenacious mass. This extract is to be prepared as the foregoing, in a soft and hard form.

HERE the resinous parts of the wood which were boiled out with the water, are apt to separate towards the end of the inspissation: hence an addition of spirit becomes necessary, to keep them united with the rest of the matter. The extract agrees in virtue with the wood.

EXTRACTUM RUTÆ.

Extract of rue.

Lond.

This is prepared from the leaves of rue, in the same manner as that of elecampane roots already described. It retains a considerable share of the warmth and pungency of the rue; for though the principal virtues of the rue reside in an essential oil, yet the oil of this plant, as formerly observed under the head of those preparations (see page 378) is not of a very volatile kind.

EXTRACTUM SABINÆ.

Extract of savin.

Lond.

This extract is prepared from the leaves of savin, in the same manner as the preceding. It does not retain so much, as that extract does, of the virtues of its subject, the oil of savin being more volatile than that of rue.

GUMMI

GUMMI et RESINA ALOES.

*Gum and resin of aloes.**Lond.*

Boil four ounces of socotorine aloes in two pints of water till as much as possible of the aloes is dissolved. The solution suffered to rest for a night, will deposite the resin to the bottom of the vessel: after which, the remaining liquor, strained, if needful, is to be evaporated, that the gum may be left.

THE gum of aloes is somewhat less purgative, and considerably less disagreeable, than the crude juice. This alteration is not owing, as might be supposed, to the separation of the resin; for the pure resin of aloes is still less disagreeable, and less purgative even than the gum: some have denied that it has any purgative virtue at all; and others ascribe to it an astringent quality. I have exhibited this resin, divided by trituration with the testaceous powders, in the dose of a scruple, without observing any effect from it (See page 75.) The gum seems to be the only part here intended for medicinal use: if the resin is required, it ought to be further purified by solution in spirit of wine; for as it is obtained by precipitation from an aqueous solution of impure aloes, all the impurities of the drug that are not soluble in water will precipitate along with it.

PILULÆ, seu EXTRACTUM, RUDII.

*The pills or extract of Rudius.**Edinb. +*

Take of

Black hellebore roots,
Colocynth,
Socotorine aloes, each two ounces;
Scammony, one ounce;
Vitriolated tartar, two drams;
Distilled oil of cloves, one dram.

Bruise the colocynth and hellebore; pour on them two quarts of water, and boil to the consumption of half the liquor: pass the decoction through a strainer, and evaporate it to the consistence of honey, adding the aloes and scammony, reduced into a fine powder: when the mass is taken from the fire, mix into it the vitriolated tartar and distilled oil.

This preparation is a medicine of 'considerable violence' as a cathartic, similar to one described hereafter, under the title of *Extractum Catharticum*. Water appears to be a better menstruum than spirituous liquors, both for the colocynth and the hellebore; the watery extracts being much less irritating than the spirituous, though not perhaps less effectual purgatives.

ROB BACCARUM JUNIPERI.

Rob of juniper berries.

Let juniper berries, thoroughly bruised, be boiled in a sufficient quantity of water, the liquor strained, and inspissated to the consistence of honey.

THIS preparation may be made also from the decoction that remains after the distillation of the essential oil of the berries. It has a sweet balsamic taste, accompanied with a greater or less bitterness, according as the seeds of the berry were more or less thoroughly bruised. This elegant preparation, though not received in our Pharmacopœias, seems not unworthy of a place in the shops. Hoffman has a great opinion of it in debilities of the stomach and intestines, and in the difficulties of urine familiar to persons of an advanced age.

S E C T. III.

EXTRACTS with RECTIFIED SPIRIT.

RECTIFIED spirit of wine dissolves the essential oils and resins of vegetables, and does not readily carry off the oil in its exhalation; the heat sufficient to exhale pure spirit being much less than that in which water considerably evaporates, or most essential oils distil. Hence a resinous or spirituous extract of wormwood, contrary to that made with water, contains the warmth and flavour, as well as bitterness of the herb; one made from cinnamon possesses its aromatic virtue, as well as its astringency; and one from lavender and rosemary flowers, retains great part of their flavour and virtues; the volatile parts, which are carried off by water in its evaporation, being left behind by the spirit.

The spirit employed for this purpose should be perfectly free from any ill flavour, which would be communicated in part to the preparation; and from any admixture of phlegm or water, which would not only vary its dissolving power, but likewise, evaporating towards the end of the inspissation, would promote the dissipation of the volatile parts of the subject. Hence, also, the subject itself ought always to be dry: those substances, which lose their virtue by drying, lose it equally on being submitted to this treatment with the purest spirit.

The inspissation should be performed from the beginning, in the gentle heat of a water-bath. It is not needful to suffer the spirit to evaporate in the air: greatest part of it may be recovered by collecting the vapour in the common distilling

vessels (See Chap. v.). If the distilled spirit is found to have brought over any flavour from the subject, it may be advantageously reserved for the same purposes again.

It is observable, that though rectified spirit is the proper menstruum of the pure volatile oils and of the grosser resinous matter of vegetables, and water of the mucilaginous and saline; yet these principles are, in almost all plants, so intimately combined together, that whichever of these liquors is applied at first, it will take up a portion of what is directly soluble only in the other. Hence fundry vegetables, extremely resinous, and whose virtues consist chiefly in their resin, afford nevertheless very useful extracts with water, though not equal to those which may be obtained by a prudent application of spirit. Hence, also, the extracts made from most vegetables by pure spirit, are not mere resins; a part of the gummy matter, if the subject contained any such, being taken up along with the resin; an admixture of great advantage to it in a medicinal view. The spirituous extracts of several vegetable substances, as mint leaves, rhubarb, saffron, dissolve in water as well as in spirit.

Pure resins are prepared by mixing, with spirituous tincture of very resinous vegetables, a quantity of water. The resin, incapable of remaining dissolved in the watery liquor, separates and falls to the bottom; leaving in the menstruum such other principles of the plant as the spirit might have extracted at first along with it.

RE-

RESINA JALAPPÆ.*Resin of jalap.**Edinb. +*

Take any quantity of jalap root very well bruised. Pour upon it so much rectified spirit of wine as will cover it to the height of four fingers; and digest them together in a sand-heat, that the spirit may extract the virtue of the root. Filtre the tincture thro' paper, put it into a glass cucurbit, and distil off one half of the spirit. Add to the remainder a proper quantity of water, and the resin will precipitate to the bottom; divide it into little cakes, and dry it with a very gentle heat.

THIS preparation is a pure resin; such gummy parts as the spirit might have taken up remaining suspended in the liquor. Its indissolubility in any aqueous fluid, and its tenacious quality, by which it adheres to the coats of the intestines, and occasions great irritation and gripes, forbid its being ever given by itself. It is fitted for use, by thoroughly triturating it with testaceous powders; by grinding it with almonds or powdered gum, and making the compound into an emulsion with water; or by dissolving it in spirit of wine, and mixing the solution with a proper quantity of syrup or of mucilage. Six or eight grains, managed in either of these ways, prove powerfully cathartic, and generally without griping or greatly disordering the body.

It has been said, that resin of jalap is frequently adulterated with common resin; and that this abuse may be discovered by spirit of wine, which dissolves the former, without touching the latter. This criterion, however, is not to be relied on; for there are many cheap resins which are soluble in spirit of wine as well

as that of jalap; and there is not any one which may not be artfully rendered so.

RESINA SCAMMONII.*Resin of scammony.**Edinb. +*

This resin is prepared in the same manner as the preceding; with which it agrees also in its general qualities; occasioning vehement gripes if taken by itself, and operating generally with sufficient safety when properly divided. Scammony is doubtless a valuable purgative; but what advantage there is in thus separating the purgative resin from its natural corrector, the gummy part, is not so clear.

RESINA GUAIACI.*Resin of guaiacum.**Edinb. +*

This resin is prepared in the same manner as the two preceding, either from the wood of guaiacum, or from what is called gum guaiacum: it is obtained most commodiously from the latter.

THE virtue of guaiacum consists wholly in its resin; and the resin of the wood, and of the gum so called, is perfectly one and the same, the gum being the natural exudation from the tree. If this exudation could be had pure, there would be no occasion for any artificial preparation of this kind: but it always contains a large proportion of earthy matter, so as to stand greatly in need of this method of purification. Sixteen ounces of the best gum guaiacum do not yield above twelve ounces of pure resin. The same quantity of the wood yields about three ounces, more or less, according to its goodness. The bark is somewhat less resinous than the wood.

RESINA CORTICIS PERUVIANI.

Resin of Peruvian bark.

Edinb. +

This resin is made in the same manner as the foregoing, and proves an elegant preparation of the bark, much stronger in taste than the watery extract described in the preceding section: it is nearly equivalent to about ten times its quantity of the bark in substance. There does not, however, appear to be any advantage in separating the pure resin by the addition of water, either in this or in the other articles. In regard to the bark particularly, it is more advisable to endeavour to unite into one compound all that can be extracted from it by watery and spirituous menstrua: and accordingly the Edinburgh College has received a preparation of this kind, which is described in the following section.

EXTRACTUM CROCI.

Extract of saffron.

Pharm. Brandenburg.

Digest saffron in fresh quantities of pure spirit of wine, so long as the spirit extracts any colour from it. Mix the several tinctures together, and distil off the spirit, in a tall glass vessel, by the heat of a water-bath, till the residuum appears of the consistence of oil or balsam.

THIS is a general process, for the preparation of extracts from aromatic and other odorous substances; which extracts have been commonly

distinguished by the name of *essential*, for the same reason that the volatile oils are so called, their retaining the specific odour and flavour of the subjects. In making the extracts of this class, the inspissation should never be carried much lower than the consistence above directed; for when the matter has become thick, the spirit exhales more difficultly than before, and is more apt to carry off with it some of the volatile parts. If the preparation is wanted in a solid or consistent form, it is more advisable to mix with it a suitable quantity of any appropriated powdery matters, than to hazard the loss of its virtue by a further evaporation. If any addition is wanted for giving consistence to the extract of saffron, saffron in substance appears to be the best.

The essential extract of saffron is an elegant and high cordial. Boerhaave says, it possesses such exhilarating virtues, that, if used a little too freely, it occasions an almost perpetual and indecent laughing: he observes, that it tinges the urine of a red colour; and that it mingles with water, spirit, and oils, but is most conveniently taken in a glass of Canary or other rich wine. A few drops are a sufficient dose. The distilled spirit contains also some share of the virtue of the saffron, though far less than the extract: it is said to have an advantage above most other cordial spirits, of disposing the patient to sweat: it may be taken, properly diluted, from a dram to half an ounce.

SECT.

S E C T. IV.

Extracts with SPIRIT and WATER.

THERE are sundry vegetables, particularly those of a resinous nature, which are treated, to better advantage, with a mixture of water and spirit, than with either of them singly. The virtues of resinous woods, barks, and roots, may indeed be in great part extracted by long boiling in fresh portions of water; but at the same time they suffer a considerable injury from the continued heat necessary for the extraction, and for the subsequent evaporation of so large a quantity of the fluid. Rectified spirit of wine is not liable to this inconvenience; but the extracts obtained by it from the substances here intended, being almost purely resinous, are less adapted to general use than in those in which the resin is divided by an admixture of the gummy matter, of which water is the direct menstruum.

There are two ways of obtaining these compound or gummy-resinous extracts: one, by using proof-spirit, that is, a mixture of about equal part of spirits and water, for the menstruum; the other, by digesting the subject first in pure spirit and then in water, and afterwards uniting into one mass the parts which the two menstrua have separately extracted. In some cases, where a sufficiency of gummy matter is wanting in the subject, it may be artificially supplied, by inspissating the spirituous tincture to the consistence of a balsam, then thoroughly mixing with it a thick solution of any simple gum, as mucilage of gum arabic, and exsiccating the compound with a gentle heat. By this method are obtained elegant gummy-refins,

extemporaneously miscible with water into milky liquors.

EXTRACTUM JALAPII.

Extract of jalap.

Lond.

Upon powdered jalap pour some rectified spirit of wine, and with a gentle heat extract a tincture: boil the remaining jalap in fresh parcels of water. Strain the first tincture, and draw off the spirit, till what remains begins to grow thick: boil the strained decoction also to a like thickness: then mix both the inspissated matters together, and with a gentle fire reduce the whole to a pilular consistence.

Edinb.

‘Take of

Jalap root, one pound;

Rectified spirit of wine, four pounds.

Digest four days, and pour out the tincture. Boil the remaining magma in ten pounds of water to two pounds; then strain the decoction, and evaporate it to the consistence of pretty thin honey. Draw off the spirit from the tincture by distillation till it becomes thick in like manner. Then mix the liquors thus inspissated; and keeping them constantly stirring, evaporate to a proper consistence.’

THIS extract is an useful purgative; ‘by some thought preferable to the crude root,’ as being of more uniform strength, and as the dose, by the rejection of the woody parts, is rendered smaller: the mean dose

is twelve grains. If the spirituous tincture was inspissated by itself, it would afford a resinous mass, which, unless thoroughly divided by proper admixtures, occasions violent griping, and yet does not prove sufficiently cathartic; the watery decoctions yield an extract which operates exceeding weakly: both joined together, as in this preparation, compose an effectual and safe purge. This method of making extracts might be advantageously applied to sundry other resinous substances, as the dry woods, roots, barks, &c. A small quantity of spirit takes up the resin; and much less water than would otherwise be necessary, extracts all the other soluble parts.

In a former edition of the Edinburgh Pharmacopœia, a little fixt alkaline salt was ordered to be added to the water in which the jalap is boiled after the action of spirit; on a supposition that this would enable the water to extract more from the root than it could by itself. But, so far as the quantity of the alkaline salt could go, it had the opposite effect, impeding the action of the water. The resinous parts of the jalap are dissolved by the spirit; and little other than the gummy matter remains for water to extract. Now, if pure gum arabic be put into water along with any alkaline salt, the salt will render the water incapable of dissolving the gum: if the gum be dissolved first, the addition of any alkaline salt will precipitate it.

EXTRACTUM CORTICIS PERUVIANI.

Extract of Peruvian bark.

Edinb.

The College of Edinburgh has directed the extract of bark to be made with water and spirit, in the same manner as the preceding. In the bark we may distinguish two

kinds of tastes, an astringent and a bitter one; the former of which seems to reside in the resinous matter, and the latter chiefly in the gummy. The watery extract (described in page 417.) is moderately strong in point of bitterness, but of the astringency it has only a small degree. The pure resin, on the other hand (page 422.), is strong in astringency, and weak in bitterness. Both qualities are united in the present extract; which appears to be the best preparation of this kind that can be obtained from this valuable drug.

EXTRACTUM LIGNI CAMPECHENSIS.

Extract of logwood.

Edinb.

This extract is directed in the Edinburgh Pharmacopœia to be prepared as the foregoing; and the same treatment is judiciously ordered for all the resinous drugs in general.

EXTRACTUM CATHARTICUM.

Cathartic extract.

Lond.

Take of

Socotorine aloes, an ounce and a half;

Colocynth, six drams;

Scammony,

Lesser cardamoms, husked, each half an ounce;

Proof-spirit, one pint.

Having cut the colocynth small, and bruised the seeds, pour on them the vinous spirit, and digest with a gentle heat for four days. Press out the tincture, and dissolve therein the aloes and scammony, first separately reduced to powder: then draw off the spirit, and inspissate the remaining mass to a pilular consistence.

THIS

THIS composition answers very effectually the intention expressed in its title, so as to be relied on in cases where the patient's life depends on its taking place: the dose is from fifteen grains to half a dram. The proof-spirit is a very proper menstruum for the purgative materials; dissolving nearly the whole substance of the aloes and scammony, except the impurities; and extracting from the colocynth, not only the irritating resin, but great part of the gummy matter. The purgative virtue of this last article appears indeed to be sufficiently got out by water; and the watery extract to operate with greater mildness than that with proof-spirit, though in general effectually: the Edinburgh College have accordingly preferred water, in making a preparation of the same intention with this, described in page 419. In our former pharmacopœias, three spices were employed in this composition, cinnamon, mace, and cloves: the cardamom seeds, now introduced, are preferable, on account of their aromatic matter being of a less volatile nature; though a considerable part of the flavour, even of these, is dissipated during the evaporation of the phlegmatic part of the proof-spirit.

CONFECTIO CARDIACA.

Cordial confection.

Lond.

Take of

Rosemary tops, fresh,
Juniper berries, each one pound;
Lesser cardamom seeds, husked,
Zedoary,
Saffron, each half a pound.

Extract a tincture from these ingredients, with about a gallon and a half of proof-spirit: let the tincture be strained off, and reduced by a gentle heat to the weight of about two pounds and a half;

then add the following ingredients very finely pulverised, and make the whole into an electary.

Compound powder of crabs-claws, sixteen ounces;
Cinnamon,
Nutmegs, each two ounces;
Cloves, one ounce;
Double-refined sugar, two pounds.

THIS confection is composed of the more unexceptionable ingredients of a composition formerly held in great esteem, and which was called, from its author, CONFECTIO RALEIGHANA. The committee, appointed for reforming the London Pharmacopœia, observe, that the original confection is composed of no less than five and twenty particulars; each of which they examined apart, except one, *ros solis*, the flower of which is too small to be gathered in sufficient quantity for the general use of the medicine, and the plant is possessed of hurtful qualities, as is experienced in cattle that feed where it grows. In this examination, many of the extracts came out so very nauseous, that it was impossible to retain them, consistent with any due regard to the taste of the composition. But some few, of equal efficacy with any of the rest, being of a tolerable taste and flavour, were compounded in different proportions; and when, after many trials, a composition was approved, the quantity of each material, that would yield the proportion of extract which entered that composition, was calculated, and from thence the proportions collected as now set down: after which the compound extract was made, and found to answer expectation.

The confection, as now reformed, is a sufficiently grateful, and moderately warm cordial; and frequently

quently given in that intention, from eight or ten grains to a scruple or upwards, in boluses and draughts. The extract retains a considerable share of the flavour and virtue of the ingredients, though not near so much as if a rectified spirit had been employed. The operator should be particularly careful to extract as much from the ingredients as the spirit will take up; otherwise the inspissated matter turns out so thin, and of so little tenacity, that the powders are apt to separate and subside from it in keeping. The crab-claw powder does not appear to be very necessary, and is inserted rather in compliance with the original, than from its contributing any thing to the intention of the medicine.

In the present edition of the Edinburgh Pharmacopœia, this preparation stands among the electaries, and is directed thus.

ELECTUARIUM CARDIACUM vulgo **CONFECTIO CARDIACA.**

Cordial electuary, commonly called cordial confectio.

Take of

Conserve of orange-peel, three ounces;

Preserved nutmegs, an ounce and a half;

Preserved ginger, six drams;

Cinnamon, in fine powder, half an ounce;

Syrup of orange-peel, as much as will form the whole into an electuary.

In the above simple and elegant formula, a number of trifling ingredients are rejected, and those substituted in their place are medicines of approved efficacy. We therefore consider this preparation as an useful remedy for the purposes expressed in its title.

S E C T. V.

Extracts by LONG DIGESTION.

IN the foregoing part of this chapter it has been observed, that the virtues of vegetable decoctions are altered by long boiling. Decoctions or infusions of drastic vegetables, by long continued boiling or digestion, lose more and more of their virulence; and at the same time deposit more and more of a gross sediment, resulting probably from the decomposition of their active parts. On this foundation it has been attempted to obtain safe and mild preparations from sundry virulent drugs; and some of the chemists have strongly recommended the process, though without specifying, or giving any intimation of, the continuance of boiling requisite for producing the due mildness in different

subjects. M. Baumé, in his *Elements de Pharmacie*, lately published, has given a particular account of an extract of opium prepared on this principle; the substance of which is as follows.

Extract of opium prepared by long digestion.

Let five pounds of good opium, cut in pieces, be boiled about half an hour, in twelve or fifteen quarts of water: strain the decoction, and boil the remainder once or twice in fresh water, that so much of the opium as is dissoluble in water may be got out. Evaporate the strained decoctions to about six quarts; which being put into a tin cucurbit, placed in a sand-

sand-bath, keep up such a fire as may make the liquor nearly boil, for three months together if the fire is continued day and night, and for six months if it is intermitted in the night; filling up the vessel with water in proportion to the evaporation, and scraping the bottom with a wooden spatula from time to time, to get off the sediment which begins to precipitate after some days digestion. The sediment needs not to be taken out till the boiling is finished; at which time the liquor is to be strained when cold, and evaporated to an extract of a due consistence for being formed into pills.

THE author observes, that by keeping the liquor strongly boiling, the tedious process may be considerably expedited, and the six months digestion reduced to four months: that in the beginning of the digestion, a thick, viscous, oily matter rises to the top, and forms a tenacious skin as the liquor cools; this is supposed to be analogous to essential oils, though wanting their volatility: that the oil begins to disappear about the end of the first month, but still continues sensible till the end of the third, forming oily clouds as often as the liquor cools: that the resin at the same time settles to the bottom in cooling, preserving for a long while its resinous form, but by degrees becoming powdery, and incapable of being any longer softened, or made to cohere by the heat: that when the process is finished, part of it still continues a perfect resin, dissoluble in spirit of wine, and part an indissoluble powder: that when the digested liquor is evaporated to about a quart, and set in the cold till next day, it yields a brownish earthy-saline matter,

called the essential salt of opium, in figure nearly like the sedative salt obtained from borax, intermingled with small needled crystals. He gives an account of his having made this preparation six or seven times. The vessel he made use of was about two inches and a half diameter in the mouth: the quantity of water evaporated was about twenty-four ounces a-day, and from a hundred and thirty to a hundred and forty quarts during the whole digestion. Out of sixty-four ounces of opium, seventeen ounces remained undissolved in the water: the quantity of resinous matter, precipitated during the digestion, was twelve ounces: from the liquor, evaporated to a quart, he obtained a dram of essential salt, and might, he says, have separated more; the liquor being then further evaporated to a pilular consistence, the weight of the extract was thirty-one ounces.

It is supposed, that the narcotic virtue of opium resides in the oily and resinous parts; and that the gummy extract, prepared by the above process, is endowed with the calming, sedative, or anodyne powers of the opium, divested of the narcotic quality as it is of the smell, and no longer productive of the disorders which opium itself, and the other preparations of it, frequently occasion. A case is mentioned, from which the innocence and mildness of the medicine are apparent; fifty grains having been taken in a day, and found to agree well, where the common opiate preparations could not be borne. But what share it possesses of the proper virtues of opium is not so clear; for the cure of convulsive motions of the stomach and vomitings, which at length happened after the extract had been continued daily in the above doses for several years (*plusieurs années*) cannot

not perhaps be ascribed fairly to the medicine.

If the theory of the process, and of the alteration produced by it in the opium, is just, a preparation equivalent to the above may be obtained in a much shorter time. If the intention is to separate the resinous and oily parts of opium, they may be separated by means of pure spirit of wine, in as many hours as the digestion requires months. The separation will also be as complete, in regard to the remaining gum, though some part of the gum will in this method be lost, a little of it being taken up by the spirit along with the other principles.

In what particular part of opium

its peculiar virtues reside, has not perhaps been incontestably ascertained; but this much seems clear from experiment, that the pure gum, freed from all that spirit can dissolve, has little, or rather nothing, of its soporific power.

There are grounds also to presume, that by whatever means we destroy or diminish what is called the narcotic, soporific, virulent quality of opium, we shall destroy or diminish likewise its salutary operation. For the ill effects, which it produces in certain cases, seem to be no other than the necessary consequences of the same power, by which it proves so beneficial in others.

C H A P. VII.

EMPYREUMATIC OILS.

VEGETABLE and animal substances, and mineral bitumens, on being urged with a red heat, have their original properties destroyed, and are resolved or changed into products of a different nature from what pre-existed in the subject. By burning them in the open air, a part is changed into ashes, a part into soot, and a part is dissolved by the air. Exposed to the fire in close vessels (as in those called retorts), having receivers adapted to them for detaining the volatile parts, they are resolved into fetid oils, and different kinds of saline substances, which rise into the receiver; and a black coal which remains behind, and which, though no farther alterable in close vessels, on admitting air burns into white ashes. The oils, called from their fetid burnt smell, *empyreumatic*, are the objects of the present chapter. Some of these, however, being obtained in the same process with certain saline bodies of more importance than themselves, are referred to the head of **SALINE PREPARATIONS**.

OLEUM BUXI.

*Oil of box.**Lond.*

Distil pieces of boxwood in a retort, with a sand-heat gradually increased: the oil will come over along with an acid spirit, which is to be separated by a funnel.

OLEUM GUAIACI.

*Oil of guaiacum.**Edinb. +*

Put any quantity of chips of guaiacum into an earthen long neck, or a glass retort, and distil either in a sand-bath or an open fire, increasing the heat by degrees. At first an acid liquor will come over; afterwards a light red oil; and at length, in the utmost degree of fire, a thick black oil, which sinks through the other liquors to the bottom of the receiver.

Oils may be obtained after the same manner from every kind of wood.

THE retort may be filled almost up to the neck with chips or small pieces

pieces of box or guaiacum, the refuse of the turner. Lute on a glass receiver with a paste made of linseed meal and water: set the retort on the bottom of a deep iron pot, with a little sand under it; and fill up the space, betwixt it and the sides of the pot, with more sand. Apply at first a gentle fire, and gradually increase it to the utmost that the furnace is capable of giving. Particular care must be had not to raise the heat too fast when the first reddish oil begins to come over; for at this time a large quantity of elastic vapour is extricated from the wood, which, if the fire is urged, or if it is not allowed an exit, will burst the vessels; when the distillation is finished, and the vessels grown cool, unlute the receiver, and separate the oil from the acid liquor. The method of performing this by the funnel, as directed in the first of the above processes, is as follows: Pour the several liquors into a glass funnel, whose stem is stoppt by the finger, the ponderous black oil sinks lowermost: suffer this to run out; then close the stem again, and afterwards separate the acid liquor from the lighter oil in the same manner. They are more perfectly separated, by pouring them into a hollow cone of filtering paper, moistened with water, and placed in a funnel: the acid liquor passes through, and the oil remains on the paper.

The oils obtained by this treatment from different woods and plants, are nearly of the same qualities: they have all a very disagreeable acrid taste, and a burnt stinking smell; without any thing of the peculiar flavour, taste, or virtues of the subject which afforded them. The present practice rarely employs those oils any otherwise than for external purposes, as the cleansing of foul bones, for the tooth-ach, against some kinds of cutaneous eruptions,

old pains and aches, and the like; and for these not very often.

OLEUM LATERITII.

Oil of bricks.

Lond.

Heat bricks red hot, and quench them in oil olive; till they have soaked up all the oil: then break them into pieces small enough to be conveniently put into a retort; and distil with a sand-heat gradually increased: an oil will arise, together with a spirit, which is to be separated from it as in the foregoing process.

This preparation has had a place in most dispensatories, under the pompous names of *Oleum Philosophorum*, *Sanctum*, *Divinum*, *Benedictum*, and others as improper as that under which it stands above. It is really oil olive, rendered strongly empyreumatic by heat; the spirit, so called, is no more than phlegm, or water, tainted with the burnt flavour of the oil. It has been celebrated for sundry external purposes, particularly against gouty and rheumatic pains, deafness, and tingling of the ears, &c. and sometimes likewise given inwardly. But common practice seems to have now entirely rejected this loathsome remedy; and the College of Edinburgh have expunged it from their book.

OLEUM PETROLEI BARBADENSIS.

Oil of Barbadoes tar.

Lond.

Distil Barbadoes tar with a sand-heat; an oil will arise, together with a spirit, which is to be separated from it.

Dr Pemberton observes, that this oil will be more or less thin, according to the continuance of the distillation; that the tar will at last be reduced

reduced to a black coal; and then the oil will be pretty deep in colour, though perfectly fluid: that this oil has a property similar to that of the tincture of nephritic wood in water, appearing blue when looked upon, but of an orange colour when held betwixt the eye and the light. By long keeping, I have observed it to lose this property. It is somewhat less disagreeable than the foregoing oils, though very acrid and stimulating.

OLEUM TEREBINTHINÆ ÆTHEREUM, et EMPYREUMATICUM sive BALSAMUM.

The ethereal oil of turpentine, and the empyreumatic oil or balsam.

Lond.

Distil the essential oil of turpentine in a retort, with a very gentle fire, until what remains has acquired the consistence of a balsam.

Balsam of turpentine may likewise be obtained from the yellow resin left after the distillation of the essential oil: upon distilling this in a retort, at first a portion of thin oil arises, which is to be kept by itself, and afterwards a thick balsam: there remains in the retort a blackish resin, called colophony.

Edinb. +

Melt any quantity of turpentine over a gentle fire, and pour it into a glass retort, of which it may fill one half: then lute on a receiver, and distil in a sand-bath. Apply at first a gentle heat, upon which an acid spirit will come over; and, on gradually increasing the fire, a limpid oil, commonly called ethereal spirit of turpentine; at length a yellow oil will arise. In the bottom of the retort, there remains a resinous

mass, called colophony: which if still farther urged with successive degrees of heat to the highest, gives first a red oil, and afterwards a darker coloured one, which sinks through the other liquors to the bottom of the receiver.

THESE processes are tedious, and accompanied with a good deal of danger; for unless the luting is very close, some of the vapour will be apt to get through, which if it catches fire, will infallibly burst the vessels. The oil here called ethereal, does not considerably differ in specific gravity, smell, taste, or medical qualities, from the cheaper one obtained by the addition of water in the common still: nor are the empyreumatic thin oil and balsam of any great esteem in practice.

OLEUM COPAIVÆ COMPOSITUM.

Compound oil or balsam of Copaiva.

Lond.

Take two pounds of balsam of Copaiva, and four ounces of gum guaiacum. Distil them in a retort, continuing the operation till a pint of oil is come over.

THIS mixture, undistilled, proves a medicine of considerable efficacy in rheumatic cases, &c. In distillation, the guaiacum gives over little, serving chiefly for the same purpose that bricks do in the oleum lateritium. The balsam distilled in a retort, with or without the gum, yields first a light coloured oil, smelling considerably of the subject; this is immediately followed by a darker coloured oil, and afterwards by a blue one; both which have little other smell than the empyreumatic one that distinguishes the oils of this class: their taste is very pungent and

and acrimonious. This balsam, distilled with water, yields as much essential oil as above of empyreumatic.

OLEUM CERÆ.

Oil of wax.

Edinb. +

Melt yellow bees wax with twice its quantity of sand, and distil in a retort placed in a sand furnace. At first an acid liquor arises, and afterwards a thick oil, which sticks in the neck of the retort, unless it be heated by applying a live coal. This may be rectified into a thin oil, by distilling it several times, without addition, in a sand-heat.

BOERHAAVE directs the wax, cut in pieces, to be put into the retort first, so as to fill one half of it; when as much sand may be poured thereon as will fill the remaining half. This is a neater, and much less troublesome way, than melting the wax, and mixing it with the sand before they are put into the retort. The author above-mentioned greatly commends this oil against roughness and chaps of the skin, and other like purposes: the college of Strasburgh speak also of its being given internally, and say it is a powerful diuretic (*ingens diureticum*) in doses of from two to four or more drops; but its disagreeable smell has prevented its coming into use among us.

BALSAMUM ANODYNUM, vulgo GUIDONIS.

The anodyne, commonly called Guido's, balsam.

Edinb.

Take of

Tacamahaca, in powder,
Venice turpentine, each equal
parts.

Put them into a retort, whereof

they may fill two thirds, and distil with a fire gradually increased. Separate, according to art, the red oil, or balsam, from the liquor that swims above it.

THIS oil is supposed to be anodyne and discutient. In foreign pharmacopœias, and in the former editions of the London and Edinburgh, oils are directed to be distilled in the same manner from different resinous and gummy resinous bodies separately, as tacamahaca, storax, ammoniacum, galbanum, sagapenum, &c. but it does not appear that they are materially different from one another in regard to their external use, which is the only intention in which they have been employed. The above composition has lost one of its former ingredients, galbanum, without the least injury to its virtue.

In the present edition of the Edinburgh Pharmacopœia, the Balsamum Anodynum is placed among the tinctures, and is directed as follows:

LINIMENTUM ANODYNUM, vulgo BALSAMUM ANODYNUM.

The anodyne liniment, commonly called anodyne balsam.

Take of

Opium, one ounce;
White Castile soap, four ounces;
Camphor, two ounces;
Essential oil of rosemary, half an ounce;
Rectified spirit of wine, two pounds.

Digest the opium and soap in the spirit for three days; then to the strained liquor add the camphor and oil, diligently shaking the vessel.

THE several ingredients in this more simple formula, are exceedingly

ly well suited for the purposes expressed in the title of this preparation; the anodyne balsam has accordingly been used with much success to allay pains in strained limbs, and such like topical affections.

OLEUM ANIMALE DIPPELII.

Dippel's animal oil.

Take any quantity of the empyreumatic oil distilled from animal substances, as that of hartshorn (the preparation of which is described along with that of the volatile salt and spirit in the following chapter.) Put it into a glass retort; and having fitted on a receiver, distil in a sand-heat: the oil will arise paler coloured and less fetid; and a black coaly matter will remain behind. Repeat the distillation in fresh retorts till the oil ceases to leave any feces, and till it loses its ill smell, and acquires an agreeable one.

OLEUM e CORNUBUS RECTIFICATUM, sive OLEUM ANIMALE.

Rectified oil of horns, or animal oil.

Edinb.

Take of

Empyreumatic oil newly distilled from the horns of animals, as much as you will.

Distil with a gentle heat, in a matrass furnished with a head, as long as a thin colourless oil comes over, which is to be freed of alkaline salt and spirit by means of water. That this oil may remain limpid and good, it ought to be put up in small phials completely filled, and inverted, having previously put into each phial a few drops of water, that on inverting it the water may in-

terpose itself betwixt the oil and the mouth of the phial.

THE quantity of oil employed in this process should be considerable: for it leaves so much black matter behind in the several distillations, that it is reduced at last to a small portion of its original quantity. It is said, that the 'product is got more limpid,' by mixing the oil with quicklime into a soft paste; the lime keeping down more of the gross matter than would remain without such an addition. 'The quicklime may here also, perhaps, act by abstracting fixed air; to the absorption of which we are disposed to refer in some measure the spoiling of the oil on exposure to the atmosphere.'

Animal oils thus rectified, are thin and limpid, of a subtile, penetrating, not disagreeable smell and taste. They are strongly recommended as anodynes and antispasmodics, in doses of from fifteen to thirty drops. Hoffman reports, that they procure a calm and sweet sleep, which continues often for twenty hours, without being followed by any languor or debility, but rather leaving the patient more alert and cheerful than before: that they procure likewise a gentle sweat, without increasing the heat of the blood: that given to twenty drops or more, on an empty stomach, six hours before the accession of an intermittent fever, they frequently remove the disorder: and that they are likewise a very generous remedy in inveterate and chronical epilepsies, and in convulsive motions, especially if given before the usual time of the attack, and preceded by proper evacuations.

The empyreumatic oils of vegetables, rectified in the same manner by repeated distillations, suffer

a like change with the animal; losing their dark colour and offensive smell, and becoming limpid, penetrating, and agreeable: in this state they are supposed, like the animal oils, to be anodyne, antispasmodic, and diaphoretic, or sudorific. It is observable, that all the empyreumatic oils dissolve in spirit of wine, and that the oftener they are rectified or redistilled, they dissolve the more readily; a circumstance in which they differ remarkably from essential oils, which, by repeated distillations, become more and more difficult of solution.

How far these preparations real-

ly possess the virtues that have been ascribed to them, has not yet been sufficiently determined by experience; the tediousness and trouble of the rectification having prevented their coming into general use, or being often made. They are liable also to a more material inconvenience in regard to their medicinal use, precariousness in their quality: for how perfectly soever they be rectified, they gradually lose, in keeping, the qualities they had received from that process, and return more and more towards their original fetidness.

C H A P. VIII.

SALTS *and* SALINE PREPARATIONS.

S E C T. I.

FIXT ALKALINE SALTS.

THE ashes of most vegetables, steeped or boiled in water, give out to it a saline substance, separable in a solid form by evaporating the water. ' It has been supposed, that these saline substances never pre-existed in the vegetable, but were always generated during the burning. This, however, is found to be a mistake; as Margraaf and other chemists have procured them from the vegetables in their entire state. Tartar, too, which has been generally considered as a product of the vinous fermentation, has been discovered in must and verjuice. The saline substances in the ashes of vegetables are of various kinds; but in the present section we are to consider the methods of obtaining one particular salt, which of all others more especially predominates, and which is called *fixt alkaline salt*. See ANALYSIS of VEGETABLES by FIRE in Part I.'

SAL TARTARI.

*Salt of tartar.**Lond.*

Let any kind of tartar be wrapt up

in strong brown paper, first made wet, or included in a proper vessel, and exposed to the fire, that its oil may be burnt out: then boil it in water, filtre the solution, and evaporate it, till there remains a dry salt, which is to be kept in a vessel closely stoppt.

Edinb.

' Take of

Tartar, what quantity you please.

Roll it up in a piece of moist bibulous paper, or put it into a crucible, and surrounding it with live coals, burn it into a coal; next, having beat this coal, calcine it in an open crucible with a middling heat, taking care that it does not melt, and continue the calcination till the coal becomes of a white, or at least of an ash colour. Then dissolve it in warm water; strain the liquor through a cloth, and evaporate it in a clean iron vessel; diligently stirring it towards the end of the process with an iron spatula, to prevent it from sticking to the bottom of the vessel. A very white

E c 2

salt

salt will remain, which is to be left a little longer on the fire, till the bottom of the vessel becomes almost red. Lastly, when the salt is grown cold, let it be put up in glass vessels well shut.

‘NATIVE tartar is a saline substance, compounded of an acid, of a fixt alkali, and of oily, viscid, and colouring matter. The purpose of the above process is, to free it of every other matter but the fixed alkali. From the mistaken notion, that tartar was essentially an acid mixed only with impurities, it has been generally supposed that the effect of this operation was the conversion of an acid into an alkali by means of heat. But since Mr Scheele has discovered, that the proper matter of tartar, freed from the oily and colouring parts, is really a salt compounded of an acid, which is predominant, and a fixt alkali, we have no farther need of such an obscure theory. The acid of the tartar by this process is dissipated by means of the heat; and the oily, viscid, and colouring matters, are partly dissipated, and partly brought to the state of insoluble earthy matter, easily separable by the future lixiviation from the alkali, where-with they were loosely combined. But by the last of these processes, something farther is carried on than the separation of the more palpable foreign matters. By allowing the salt, freed from the water of the lixivium, to remain upon the fire till the bottom of the vessel becomes almost red, any oily matter that may still be present seems to be decomposed by the united action of the heat and fixt alkali forming with a part of the latter, by their reciprocal action, a volatile alkaline salt, forthwith discharged in elastic vapours. Besides the complete discharge of the above principles, the

remaining fixed alkali also suffers a considerable loss of its fixed air, or aerial acid; with which, when fully saturated, it forms the imperfect neutral salt, denominated by Dr Black *mild fixed alkali*: on this account it is somewhat caustic, considerably deliquescent, and in proportion to its possessing these properties more or less, it more or less nearly approaches to the state of pure alkalis. See ANALYSIS of VEGETABLES by FIRE, and the article FIXED AIR. It is not, however, so effectually deprived of fixed air as to be sufficiently caustic for a number of purposes. Where causticity is not required, the salt thus purified is abundantly fit for most pharmaceutical purposes: but as native tartar generally contains small portions of neutral salts besides the foreign matters already noticed, it is necessary, if we wish to have a very pure alkali for nice operations, to employ crystallization, and other means beside the process here directed.’

The white and red sorts of tartar are equally fit for the purpose of making fixt salt; the only difference is, that the white affords a somewhat larger quantity than the other; from sixteen ounces of this sort, upwards of four ounces of fixt alkaline salt may be obtained. The use of the paper is to prevent the smaller pieces of the tartar from dropping down into the ash-hole, through the interstices of the coals, upon first injecting it into the furnace.

The calcination of the salt (if the tartar was sufficiently burnt at first) does not increase its strength so much as is supposed: nor is the greenish or blue colour any certain mark either of its strength, or of its having been, ‘as was formerly supposed,’ long exposed to a vehement fire: for if the crucible is perfectly clean, close covered, and has stood the fire without cracking, the salt will

will turn out white, though kept melted and reverberated ever so long; whilst, on the other hand, a slight crack happening in the crucible, or a spark of coal falling in, shall in a few minutes give the salt the colour admired. The colour in effect, is a mark rather of its containing some inflammable matter, than of its strength.

SALALCALINUS fixus VEGETABILIS PURIFICATUS.

Fixed vegetable alkaline salt purified.

Edinb.

Let the fixed alkaline salt, called in England *pearl ashes*, be put into a crucible, and brought to a somewhat red heat, that the oily impurities, if there are any, may be consumed; then having beat and agitated it with an equal weight of water, let them be well mixed. After the feces have subsided, pour the ley into a very clean iron pot, and boil to dryness, diligently stirring the salt towards the end of the process, to prevent its sticking to the vessel.

This salt, if it hath been rightly purified, though it is very dry, if beat with an equal weight of water, can be dissolved into a liquor void of colour or smell.

THE potash used in commerce is an alkali mixed with a considerable quantity of remaining charcoal, sulphur, vitriolated tartar, and oily matter. In the large manufactories, the alkaline part is indeed considerably freed from these impurities by mixing the weed-ashes with water, evaporating the clear ley, and burning the remaining matter in an oven; but besides that this process is insufficient to the complete separation of the impurities, it also superadds a quan-

tity of stony matter, giving to the alkali the *pearl* appearance (whence its name), and rendering it altogether unfit for pharmaceutical purposes. By the process here directed, the alkali is effectually freed from all these heterogeneous matters, except perhaps a small proportion of vitriolated tartar, or other neutral salt, which may very generally be neglected. As in this process no after calcination is directed, it is probable that the fixed alkali thus prepared will not prove so caustic, that is to say, is not so considerably deprived of fixed air, as in the process directed for preparing the salt tartari. It is, however, sufficiently pure for most purposes; and we consider the above process as the most convenient and cheap method of obtaining the vegetable fixed alkali in its mild state.

SAL ABSINTHII.

Salt of wormwood.

Edinb. +

Let any quantity of wormwood, either fresh gathered or moderately dried, be put into an iron pan, and with a gentle fire, reduced into white ashes. Boil these with a sufficient quantity of spring water, filtre the liquor, and evaporate it till a dry salt is left behind: this proves of a brown colour; by repeated solution, filtration, and inspissation, it becomes at length pure and white.

It is generally expected of a brown colour in the shops, and distinguished by this mark from the purer alkali of tartar. If required to be white, the means above recommended will scarcely render it so; the remains of the oil of the plant, on which the brown colour depends, not being effectually separable without strong calcination. If the ashes

E c 3

have

Have been fully calcined before the affusion of water, the salt will turn out white at once.

Lond.

Let the ashes of wormwood [which the shops are usually supplied with from the country] be put into an iron pot, or any other convenient vessel, and kept redhot over the fire for some hours, often stirring them, that what oily matter remains may be burnt out; then boil the ashes in water, filtre the ley through paper, and evaporate it till a dry salt remains; which is to be kept in a vessel close stoppt.

After the same manner a fixt alkaline salt may be prepared from all those vegetables which yield this kind of salt [*L.*], as beanstalks, broom, &c. [*E.*] +

THESE salts are obtained to greater advantage from dry plants than from green ones; they must not however be too dry, or too old; for in such case they afford but a small quantity of salt. The fire should be so managed, as that the subject may burn freely, yet not burst into violent flame; this last circumstance would greatly lessen the yield of the salt; and a very close smothering heat would have this effect in a greater degree: hence the ashes of charcoal scarce yield any salt, whilst the wood it was made from, if burnt at first in the open air, affords a large quantity.

If the ashes are not calcined after the burning, a considerable portion of the oil of the subject remains in them unconsumed; and hence the salt turns out impure, of a brown colour, and somewhat saponaceous. Tachenius, Boerhaave, and others, have entertained a very high opinion of these oily salts, and endeavour as much as possible to retain the oil in

them. They are nevertheless liable to a great inconvenience, uncertainty in point of strength, without promising any advantage to counterbalance it: if the common alkalis are required to be made milder and less acrimonious (which is the only point aimed at in the making of these medicated salts, as they are called) they may be occasionally rendered so by suitable additions. Pure alkalis, united with a certain quantity of expressed oil, compose (as we shall see hereafter) a perfect soap, in which the pungent taste of the alkaline salt is totally suppressed: it is obvious, therefore, that on the same principle the pungency may be covered in part, and this proportionably to the quantity of oily matter combined. But we may obtain more elegantly, by a process described in page 440, (under the title of *Sal alkalinus salis marini*), a perfectly pure white alkaline salt, of all the mildness that can be wished for.

The shops were formerly burdened with a great number of these salts, which are now very judiciously rejected; those here retained being abundantly sufficient to answer all the useful purposes that can be expected from these kinds of preparations. All fixt alkaline salts, from whatever vegetable they may be obtained (those of certain marine plants excepted, which partake of sea-salt or its alkali), are nearly one and the same thing, and not distinguishable from each other, at least in their effect as medicines; and hence the college of London, in most of the compositions wherein these sorts of salts are ingredients, allow any fixt alkaline salt to be made use of.

Some differences indeed are observed in them as usually prepared; but these depend upon the manner in which the process for obtaining them is conducted, or on some saline

line matters of a different kind, which either pre-existed in the vegetable, or were produced in the burning, remaining mixed with the alkali. A variation in the heat by which the plant is burnt or calcined, occasions a difference in the acrimony of the produce: the more vehement and lasting the fire (to a certain degree) the more acrid is the salt. The circumstances of using the ashes fresh burnt, or after they have been long exposed to the air, and of applying the water hot or cold to the ashes, likewise make a considerable variation. By long exposure to the air, even the alkalis that have been made caustic by quicklime, lose all the acrimony which they had received from that treatment, 'on account of their absorbing fixed air from the atmosphere.' The chemists affirm, that they imbibe also from the air, in a length of time, a portion of vitriolic acid, by which a part of them is converted into a neutral salt, the same with the *tartarus vitriolatus* of the shops; and it is certain, that such a salt is often found among the ashes of vegetables; though it does not, perhaps, arise from that origin. Boiling water takes up this neutral salt from the ashes; whilst cold water extracts from them only the pure alkaline salts, unless it be used in too large a quantity, or suffered to stand too long upon them. Boiling water dissolves also more than cold, of the oily parts of the subject, if any remained unconsumed.

NITRUM FIXUM.

Fixt nitre, or rather fixed alkali of nitre.

Take of

Powdered nitre, four ounces;

Charcoal in powder, five drams.

Mix them thoroughly together, by rubbing them in a mortar; and inject the mixture, by a little at a

time, into a red-hot crucible. A deflagration, or a bright flame with a hissing noise, happens on each injection: the whole quantity being thus deflagrated, continue the fire strong for half an hour.

NITRE is composed of the common vegetable fixt alkaline salt and a peculiar acid. In this process the acid is destroyed, and the remaining salt proves merely alkaline, not different in quality from the *sal tartari*, except that a very minute portion of the nitre generally remains unchanged; the salt is purified by solution in water, filtration, and evaporation. It may be observed, that the salt receives no sensible addition from the vegetable coal employed for the deflagration; for the ashes of charcoal have exceeding little saline matter; and the quantity of charcoal above directed, yields only a grain or two of ashes. 'These are the several methods of obtaining the vegetable fixed alkali in its pure state, so far as it is freed of every thing but fixed air. The salt may be obtained by a variety of other processes; but is always the same thing, save differences in regard to its purity.'

This salt, then, has a pungent fiery taste, and occasions in the mouth a kind of urinous flavour, probably from a resolution which it produces in the saliva. It readily dissolves in water, and deliquesces in the air, but is not acted upon by pure vinous spirits. Instead of being dissolved by vinous spirits, if a saturated solution of it in water be dropt into the pure spirit, it will not mix therewith, but fall distinct to the bottom: if water be mixed with the spirit, the addition of fixt alkaline salt will imbibe the water, and form with it, as in the other case, a distinct fluid at the bottom:

E e 4

this

this property affords a commodious method of dephlegmating vinous spirits, or separating their watery part, as we have already seen in page 395.

Mild salt of tartar, or solutions of it in water, raise an effervescence on the admixture of acid liquors, and destroy their acidity, the alkali and acid uniting together into a compound of new qualities, called neutral: earthy substances, and most metallic bodies, previously dissolved in the acid, are precipitated from it by the alkali. The alkaline salt changes the colours of the blue flowers of plants, or their infusions, to a green: it has the same effect on the bright red flowers and on the colourless infusions of white ones; but in many of the dark red, as those of the wild poppy, and of the yellow ones, it produces no such change.

Solutions of this salt liquefy all the animal juices except milk; corrode the fleshy parts into a kind of mucous matter; concrete with animal fats and vegetable oils into soap; and dissolve sulphur into a red liquor; especially if assisted by a boiling heat, and mingled with quicklime, which greatly promotes their activity, 'by abstracting their fixed air.' On pure earths and stones, these liquors have no sensible action; but if the earth or stones be mixed with four or five times the weight of the dry salt, and urged with a strong fire, they melt along with it, and become afterwards perfectly soluble both in water and by the moisture of the air: with a smaller proportion of the salt, as an equal weight, they run into an indissoluble glassy matter.

The medical virtues of this salt are, to attenuate the juices, resolve obstructions, and promote the natural secretions. A dilute solution of it drank warm in bed, generally

excites sweat; if that evacuation is not favoured, its sensible operation is by urine. It is an excellent remedy in colic habits, especially if a few grains of aloes be occasionally interposed; with this advantage above other purgatives and laxatives, that when the complaint is once removed, it is not apt to return. Where acidities abound in the first passages, this salt absorbs the acid, and unites with it into a mild aperient neutral salt. As one of its principal operations is to render the animal fluids more thin, it is obvious, that where they are already colligated, as in scurvies, and in all putrid disorders in general, this medicine is improper. 'By Dr Pringle's experiments, however, fixed alkali was found to be very considerably antiseptic.' The common dose of the salt is from two or three grains to a scruple; in some circumstances it has been extended to a dram; in which case it must always be largely diluted with watery liquors.

SAL ALCALINUS SALIS MARINI.

The alkaline salt of sea-salt.

Take of

Cubical nitre (prepared as hereafter described in sect. vi. of this chapter) four ounces;

Charcoal, five drams:

Mix and deflagrate as in the preceding process.

CUBICAL nitre is composed of the nitrous acid united with the alkaline basis of sea-salt: the acid being here separated in the deflagration, that alkali remains nearly pure. It possesses the general properties of the foregoing preparation; changing blue flowers, green; dissolving oils, salts, and sulphur; bringing earths and stones into fusion, and forming with them, according to its quantity, either a vitreous or a soluble

soluble compound; effervescing with acids, precipitating earths, and metals dissolved in them, and uniting with the acid into a neutral salt. It differs from the foregoing alkalis, in being much milder in taste; not so readily dissolving in water; not at all deliquating in the air; easily assuming, like neutral salts, a crystalline form; and yielding, with each of the common acids, compounds very sensibly different, both in their form and qualities, from those which result from the coalition of the vegetable alkalis with the respective acids. The crystals of this salt itself are prismatic, greatly resembling those of the salt called *sal mirabile*. (See the section of NEUTRAL SALTS.) Exposed to a warm air, they fall into a porous, friable mass, and lose above two-thirds of their weight.

How far this salt differs in medical virtue from the other alkalis, is not well known. It apparently possesses the same general virtues; and, as it is far milder, may be given in more considerable doses.

A salt of the same nature with this, but less pure, as containing an admixture of the common vegetable alkali, is prepared at Alicant, and some other places, from the ashes of certain marine plants, called *kali*; which plants are supposed to have given rise to the name *alkali*. The salt of the *kali* plants is called *soda* or *bariglia*: it has been long used medicinally in France, and begins now to be introduced into practice in this country.

SAL ALCALINUS fixus FOS- SILIS PURIFICATUS.

Fixed fossil alkaline salt purified.

Edinb.

Take of

Ashes of Spanish kali, commonly called *soda* or *barilla*, as much as you please.

Bruise them; then boil in water till

all the salt is dissolved in the water. Strain this through paper, and evaporate in an iron vessel, so as after the liquor has cooled the salt may concrete into crystals.

By the above process, the fossil alkali is obtained sufficiently pure, being much more disposed to crystallize than the vegetable alkali; the admixture of this last, objected to by Dr Lewis, is hereby in a great measure prevented.

The natrum, or fossil alkali, is found lying upon the ground in the island of Teneriff, and some other countries. The native productions of this salt seem to have been better known to the ancients than to late naturalists; and it is, with good reason, supposed to be the nitre of the Bible. How far the native natrum may supersede artificial means to procure it from mixed bodies, we have not been able to learn with certainty.

LIXIVIUM TARTARI [L.] Liquamen salis tartari, vulgo Oleum tartari per deliquium [E.]

Ley of tartar,

Or oil of tartar per deliquium.

Lond.

Let tartar, calcined to whiteness, be set by in a moist place, that it may liquefy.

Edinb.

Put any quantity of salt of tartar in a flat glass dish, and expose it to the air, for some days, in a moist place; it will run into a liquor, which is either to be filtered thro' paper, or separated from the feces by decantation.—The higher the salt has been calcined, the more readily will it relent in the air.

THE solutions of fixt alkaline salts, effected by exposing them to a moist air, are generally looked upon as being purer than those made by applying water directly: for though

though the salt be repeatedly dissolved in water, filtered, and exsiccated; yet on being liquefied by the humidity of the air, it will still deposit a portion of earthy matter: but it must be observed, that the exsiccated salt leaves always an earthy matter on being dissolved in water, as well as on being deliquated in the air. Whether it leaves more in one circumstance than in the other, I have not examined. The deliquated lixivium is said to contain nearly one part of alkaline salt to three of an aqueous fluid. It is indifferent, in regard to the lixivium itself, whether the white ashes of tartar, or the salt extracted from them, be used: but as the ashes leave a much greater quantity of earth, the separation of the ley proves more troublesome.

LIXIVIUM SAPONARIUM.

Soap ley.

Lond.

Take of

Russia pot-ash,

Quicklime, each, equal weights.

Gradually sprinkle on them as much water as will flake the lime; then pour on more water, stirring the whole together, that the salt may be dissolved: let the ley settle, pour it off into another vessel, and, if there is occasion, filtre it. A wine pint of this ley, measured with the greatest exactness, ought to weigh just sixteen ounces Troy. If it proves heavier, for every dram that it exceeds this weight, add to each pint of the liquor an ounce and a half of water by measure: if lighter, boil it till the like quantity is wasted, or pour it upon fresh lime and ashes.

QUICKLIME greatly increases the strength of alkaline salts; and hence this ley is much more acrimonious, and acts more powerfully as a menstruum on oils, fats, &c. than a so-

lution of the pot-ash alone: the lime should be used fresh from the kiln; by long keeping, even in close vessels, it loses of its strength: such should be made choice of as is thoroughly burnt or calcined, which may be known by its comparative lightness.

All the instruments employed in this process, should be either of wood, earthen ware, or glass: the common metallic ones would be corroded by the ley, so as either to discolour or communicate disagreeable qualities to it. If it should be needful to filtre or strain the liquor, care must be taken that the filtre or strainer be of vegetable matter: woollen, silk, and that sort of filtering paper which is made of animal substances, are quickly corroded and dissolved by it.

The liquor is most conveniently weighed in a narrow-necked glass bottle, of such a size, that the measure of a wine pint may arise some height into its neck; the place where it reaches to being marked with a diamond. A pint of the common leys of our soft soapmakers weighs more than sixteen ounces: it has been found that their soap-ley will be reduced to the standard here proposed, by mixing it with something less than an equal measure of water.

LIXIVIUM CAUSTICUM.

Caustic ley.

Edinb.

Take of

Fresh-burnt quicklime, eight ounces;

Purified fixed vegetable alkaline salt, eight ounces.

Throw in the quicklime, with twenty-eight ounces of warm water, into an iron or earthen vessel. The ebullition and extinction of the lime being perfectly finished, instantly add the alkaline salt; and having thoroughly

roughly mixed them, shut the vessel till the whole cools. Stir the cooled matter, and pour out the whole into a glass funnel, whose throat must be stopp'd up with a piece of clean rag. Let the upper mouth of the funnel be covered, whilst the tube of the other is inserted into a glass vessel, so that the ley may gradually drop through the rag into the vessel placed underneath. When it first gives over dropping, pour upon it into the funnel some ounces of water; but cautiously, and in such a manner, that the water shall swim above the matter. The ley will again begin to drop, and the affusion of water is to be repeated in the same manner, until three pounds have dropped, which takes up the space of two or three days; then agitating the superior and inferior parts of the ley together, mix them, and put up the liquor in a well-shut vessel.

If the ley is rightly prepared, it will be void of colour or smell; nor will it raise an effervescence except, perhaps, a very slight one with acids. Colour and odour denote the salt not sufficiently calcined; and effervescence, that the quicklime has not been good.

THE reasons and propriety of the different steps in the above process will be best understood by studying the theory on which it is founded. The principle of mildness in all alkaline salts, whether fixed or volatile, vegetable or fossil, is very evidently fixed air or the ærial acid: But as quicklime has a greater attraction for fixed air than any of these salts, so if this substance is presented to any of them, they are thereby deprived of their fixed air, and forthwith become caustic. This is what precisely happens in the above processes (See

ANALYSIS OF VEGETABLES by FIRE, and the article FIXED AIR). The propriety of closely shutting the vessels through almost every step of the operation is sufficiently obvious; viz. to prevent the absorption of fixed air from the atmosphere, which might defeat our intentions. When only a piece of cloth is put into the throat of the funnel, the operation is much more tedious, on account that the pores of the cloth are soon blocked up with the wet powdery matter. To prevent this, it may be convenient to place above the cloth a piece of fine Fly's wire-work; but as metallic matters are apt to be corroded, the method used by Dr Black is of all others the most eligible. The Doctor first drops a rugged stone into the tube of the funnel, in a certain place of which it forms itself a firm bed, whilst the inequalities on its surface afford interstices of sufficient size for the passage of the filtering liquor. On the upper surface of this stone he lightly imbeds a thin layer of lint or clean tow; immediately above this, but not in contact with it, he drops a stone similar to the former, and of a size proportioned to the swell in the upper part of the tube of the funnel. The interstices between this second stone and the funnel are filled up with stones of a less dimension, and the gradation uniformly continued till pretty small sand is employed. Finally, this is covered with a layer of coarser sand and small stones to sustain the weight of the matter, and to prevent its being inviscated in the minute interstices of the fine sand. The throat of the funnel being thus built up, the stony fabric is to be freed of clay and other adhering impurities, by making clean water pass through it till the water comes clear and transparent from the extremity of the funnel. It is obvious, that in this contrivance the author has, as usual,

usual, copied nature in the means she employs to depurate watery matters in the bowels of the earth; and it might be usefully applied for the filtration of sundry other fluids.

‘It is a very necessary caution to pour the water gently into the funnel; for if it is thrown in a forcible stream, a quantity of the powdery matter will be washed down, and render all our previous labour useless. That part of the ley holding the greatest quantity of salt in solution, will no doubt be heaviest, and will consequently sink lowest in the vessel: the agitation of the ley is therefore necessary, in order to procure a solution of uniform strength through all its parts. If the salt has been previously freed of oily and other inflammable matters, this ley will be colourless and void of smell. If the quicklime has been so effectually deprived of its own fixed air, as to be able to absorb the whole of that in the alkali, the ley will make no effervescence with acids, being now deprived of fixed air, to the discharge of which by acids this appearance is to be ascribed in the mild or aerated alkalis.

‘The caustic ley is therefore to be considered as a solution of pure alkali in water. See article FIXED AIR.

‘It may be proper to observe, for the sake of understanding the whole of the theory of the above process, that whilst the alkali has become caustic, from being deprived of fixed air by the quicklime, the lime has in its turn become mild and insoluble in water from having received the fixed air of the alkali.

‘The caustic ley, under various pompous names, has been much used as a lithontriptic; but its fame is now beginning to pass away. In acidities in the stomach, attended with much flatulence and laxity, the caustic ley is better adapted than mild alkalis; as in its union with

the acid matter it does not separate air. When covered with mucilaginous matters it may be safely taken into the stomach; and by its stimulus coincides with the other intentions of cure.’

LAPIS SEPTICUS, seu CAUTERIIUM POTENTIALE.

The septic stone, or potential cautery. Edinb.

Take of

Potash,

Quicklime, each equal parts;

Water, three times the weight of both.

Macerate for two days, occasionally stirring them; then filtre the ley, and evaporate it to dryness. Put the dry mass into a crucible, and urge it with a strong fire, till it flows like oil: then pour it out upon a flat plate made hot; and while the matter continues soft, cut it into pieces of a proper size and figure, which are to be kept in a glass vessel closely stoppt.

CAUSTICUM COMMUNE ACERRIMUM.

The strongest common caustic. Edinb.

‘Take of

Caustic ley, what quantity you please.

Evaporate it in a very clean iron vessel upon a gentle fire, till, on the ebullition ceasing, the saline matter gently flows like oil, which happens before the vessel becomes red. Pour out the caustic, thus liquefied, upon a smooth iron plate; let it be divided into small pieces before it hardens, and these are to be put up into well-shut phials.

‘THE effect of the above processes is simply to discharge the water of the solution, whereby the causticity of the alkali is more concentrated in any given quantity. These preparations

parations are strong and sudden caustics.' The caustic prepared in this way has an inconvenience of being apt to liquefy too much upon the part to which it is applied, so that it is not easily confined within the limits in which it is intended to operate; and indeed the suddenness of its action depends on this disposition to liquefy.

CAUSTICUM COMMUNE FORTIUS.

The stronger common caustic.

Lord.

Boil any quantity of the soap leys above described to one-fourth part; then, whilst it continues boiling, some lime that has been kept for several months in a glass vessel stopt with a cork is to be sprinkled in by little and little, till it has absorbed all the liquor, so as to form a kind of paste; which keep for use in a vessel very closely stopt.

CAUSTICUM COMMUNE MITIUS.

The milder common caustic.

Edinb.

' Take of
Caustic ley, what quantity you please.
Evaporate in an iron vessel till one-

third remains; then mix with it as much new-slaked quicklime as will bring it to the consistence of pretty solid pulse, which is to be kept in a vessel closely stopt.

' HERE the addition of lime in substance renders the preparation less apt to liquefy than the foregoing, and consequently more easily confineable within the intended limits, but proportionably slower in its operation. The design of keeping or of slaking the lime is, that its acrimony may be somewhat abated.'

Exposed long to the air, these preparations gradually resume their power of effervescence, and lose proportionably of the additional activity which the quicklime had produced in them.

Lord.

Take of

Fresh quicklime,

Soft soap, of each equal parts.

Mix them well together at the time of using.

THIS caustic, notwithstanding the lime is used fresh, proves much milder than the former; the acrimony of the salt being here covered by the oil and tallow by which it is reduced into soap.

S E C T. II.

VOLATILE ALKALINE SALTS.

AS fixed alkalis are procured from the burning of vegetables, and remain behind in the ashes; volatile ones are produced by a like degree of heat from animal substances, and rise in distillation along with the other volatile principles; the admission of air necessary for the production of the former is not needful for the latter. These salts are obtainable also from some vege-

table matters, and from vegetable and animal soot. Though a strong fire is requisite for their production, yet when once completely formed, they are dissipated by the gentlest warmth: in distillation they rise sooner than the most highly rectified spirit of wine. They are produced in urine by putrefaction without fire; and without fire also they exhale from it.

SPI-

**SPIRITUS, SAL, et OLEUM
CORNU CERVI.**

Spirit, salt, and oil of hartshorn.

Lond.

Distil pieces of hartshorn by a fire gradually raised almost to the highest; a spirit, salt, and oil will ascend.

If the oil be separated, and the spirit and salt distilled again together with a very gentle heat, they will both arise more pure. If this be carefully repeated several times, the salt will become exceedingly white, the spirit limpid as water, and of a grateful odour.

The salt, separated from the spirit, and sublimed first from an equal weight of pure chalk, and afterwards from a little rectified spirit of wine, becomes the sooner pure.

Calcined hartshorn is generally made by burning the horns left after this distillation.

After the same manner a spirit, salt, and oil, may be obtained from every kind of animal substance.

Edinb. +

Put pieces of hartshorn into a large iron-pot furnished with an earthen head; and having fitted on a capacious receiver, and luted the junctures, distil in an open fire gradually increased. At first a phlegm arises, then a spirit, and afterwards a volatile salt, accompanied with an oil: the oil that comes over first is of a yellowish colour; but on protracting the distillation, there succeeds a reddish one verging to black. In the bottom of the iron pot there remains a black coal; which being burnt to whiteness in the open air, is called *calcined hartshorn*.

Having poured out of the recipient all the different matters which

have come over into it, they may be separated from one another in the following manner: the oil separates from the phlegm and spirit in filtration; the two latter will pass through, and the oil remain on the filtre. The phlegm may be separated from the spirit by distillation in a tall vessel with a gentle heat: the spirit will come over into the recipient, and the phlegm remain at the bottom of the distilling vessel.

The spirit may be divided into a volatile salt and phlegm, by distilling it in a very tall and narrow cucurbit: the salt will arise, and adhere to the head in a dry form; the phlegm remaining behind.

The salt may be freed from the oil by subliming it from twice its quantity of potash; for the oil is kept down by the potash whilst the salt arises.

The spirit also is rendered purer, by adding to every pint two ounces of potash, and distilling in a glass retort.

The remaining potash may be again purified for use, by calcining it in an open fire, so as to burn out the oil it had absorbed from the salt or spirit.

A spirit, salt, and oil, may be obtained in the same manner from all the solid parts of animals.

THE wholesale dealers have very large pots for the distillation of hartshorn, with earthen heads almost like those of the common still: for receivers, they use a couple of oil jars, the mouths of which are luted together; the pipe that comes from the head enters the lowermost jar through a hole made on purpose in its bottom. When a large quantity of the subject is to be distilled, it is customary to continue the operation

ration for several days successively ; only unluting the head occasionally to put in fresh materials.

When only a small quantity of spirit or salt is wanted, a common iron pot, such as is usually fixed in sand furnaces, may be employed ; an iron head being fitted to it. The receiver ought to be large, and a glass, or rather tin adopter, inserted betwixt it and the pipe of the head.

The distilling vessel being charged with pieces of the horn, a moderate fire is applied, which is slowly increased, and raised at length almost to the utmost degree. At first apblegmatic liquor arises ; the quantity of which will be lesser or greater, according as the horns were more or less dry : this is succeeded by the salt and oil ; the salt at first dissolves as it comes over in the phlegm, and thus forms what is called *spirit*. When the phlegm is saturated, the remainder of the salt concretes in a solid form to the sides of the recipient. If it is required to have the whole of the salt solid and undissolved, the phlegm should be removed as soon as the salt begins to arise, which may be known by the appearance of white fumes : and that this may be done the more commodiously, the receiver should be left unluted, till this first part of the process is finished. The white vapours which now arise, sometimes come with such vehemence, as to throw off or burst the receiver ; to prevent this accident, it is convenient to have a small hole in the luting ; which may be occasionally stoppt with a wooden peg, or opened as the operator shall find proper. After the salt has all arisen, a thick dark-coloured oil comes over : the process is now to be discontinued ; and the vessels, when grown cold, unluted.

All the liquid matters being poured out of the receiver, the salt which

remains adhering to its sides is to be washed out with a little water, and added to the rest. It is convenient to let the whole stand for a few hours, that the oil may the better disengage itself from the liquor, so as to be first separated by a funnel, and afterwards more perfectly by filtration through wetted paper. The salt and spirits are then to be farther purified as above directed.

The spirit of hartshorn met with in the shops is extremely precarious in point of strength ; the quantity of salt contained in it (on which its efficacy depends) varying according as the distillation in rectifying it is continued for a longer or shorter time. If after the volatile salt has arisen, so much of the phlegm or watery part be driven over after it, as is just sufficient to dissolve it, the spirit will be fully saturated, and as strong as it can be made. If the process is not at this instant stoppt, the phlegm, continuing to arise, must render the spirit continually weaker and weaker. The distillation therefore ought to be discontinued at this period ; or rather whilst some of the salt still remains undissolved : the spirit will thus prove always equal, and the buyer be furnished with a certain criterion of its strength. Very few have taken any notice of the above-mentioned inconvenience of these kinds of spirits ; and the remedy is first hinted at in the Pharmacopœia Reformata. The purity of the spirit is easily judged from its clearness and grateful odour.

VOLATILE alkaline salts, and their solutions called *spirits*, agree, in many respects, with fixt alkalis, and their solutions or leys ; as in changing the colour of blue flowers to a green ; effervescing with and neutralising acids when in their mild

mild state; liquefying the animal juices, and corroding the fleshy parts, so as when applied to the skin, and prevented from exhaling by a proper covering, to act as caustics; dissolving oils and sulphur, though less readily than the fixed alkalis, on account, probably, of their not being able to bear any considerable heat, by which their activity might be promoted. Their principal difference from the other alkalis seems to consist in their volatility: they exhale or emit pungent vapours in the coldest state of the atmosphere; and by their stimulating smell they prove serviceable in languors and faintings. Taken internally, they discover a greater colliquating as well as stimulating power; the blood drawn from a vein, after their use has been continued for some time, being found to be remarkably more fluid than before; they are likewise more disposed to operate by perspiration, and to act on the nervous system. They are particularly useful in lethargic cases; in hysterical and hypochondriacal disorders, and in the languors, headaches, inflations of the stomach, flatulent colics, and other symptoms which attend them; they are generally found more serviceable to aged persons, and in phlegmatic habits, than in the opposite circumstances. In some fevers, particularly those of the low kind, accompanied with a cough, hoarseness, and a redundancy of phlegm, they are of great utility; liquefying the viscid juices, raising the vis vitæ, and exciting a salutary diaphoresis: but in putrid fevers, scurvy, and wherever the mass of blood is thin and acrimonious, 'their use is ambiguous.' As they are more powerful than the fixt, in liquefying tenacious humours; so they prove more hurtful, where the fluids are already in a colliquated state. In vernal intermittents, particularly

those of the slow kind, they are often the most efficacious remedy. Mr Bisset observes, in his Essay on the Medical Constitution of Great Britain, that though many cases occur which will yield to no other medicine than the bark, yet he has met with a pretty many that were only suppressed from time to time by the bark, but were completely cured by alkaline spirits: That these spirits will often carry off vernal intermittents, without any previous evacuation: but that they are generally more effectual, if a purge is premised; and in plethoric or inflammatory cases, or where the fever personates a remittent, venesection.

These salts are most commodiously taken in a liquid form, largely diluted; or in that of a bolus, which should be made up only as it is wanted. The dose is from a grain or two to ten or twelve. Ten drops of a well made spirit, or saturated solution, are reckoned to contain about a grain of the salt. In intermittents, fifteen or twenty drops of the spirit are given in a tea-cup full of cold spring water, and repeated five or six times in each intermission.

THE volatile salts and spirits prepared from different animal substances, have been supposed capable of producing different effects upon the human body, and to receive specific virtues from the subject. The salt of vipers has been esteemed particularly serviceable in the disorders occasioned by the bite of that animal; and a salt drawn from the human skull, in diseases of the head. But modern practice acknowledges no such different effects from these preparations; and chemical experiments have shown their identity. There is indeed, when not sufficiently purified, a very perceptible difference in the smell, taste, degree of pungency, and volatility of these salts;

salts; and in this state their medicinal virtues vary considerably enough to deserve notice: but this difference they have in common, according as they are more or less loaded with oil, not as they are produced from this or that animal substance. As first distilled, they may be looked upon as a kind of volatile soap, in which the oil is the prevailing principle; in this state they have much less of the proper alkaline acrimony and pungency than when they have undergone repeated distillations, and such other operations as disengage the oil from the salt; for by these means they lose their saponaceous quality, and acquiring greater degrees of acrimony, become medicines of a different class. These preparations therefore do not differ near so much from one another, as they do from themselves in different states of purity. To which may added, that when we consider them as loaded with oil, the virtues of a distilled animal oil itself are likewise to be brought into the account.

These oils, as first distilled, are highly fetid and offensive, of an extremely heating quality, and of such activity, that, according to Hoffman's account, half a drop dissolved in a dram of spirit of wine, is sufficient to raise a copious sweat. By repeated rectifications, they lose their offensiveness, and at the same time become mild in their medicinal operation. The rectified oils may be given to the quantity of twenty or thirty drops, and are said to be anodyne and antispasmodic, to procure a calm sleep and gentle sweat, without heating or exagitating the body (See page 432). It is obvious therefore that the salts and spirits must differ, not only according to the quantity of oil they contain, but according to the quality of the oil itself in its different states.

The volatile salts and spirits, as first distilled, are of a brown colour, and a very offensive smell: by repeated rectification, as directed in the processes above set down, they lose great part of the oil on which these qualities depend, the salt becomes white, the spirit limpid as water, and of a grateful odour; and this is the mark of sufficient rectification.

It has been objected to the repeated rectification of these preparations, that, by separating the oil, it renders them similar to the pure salt and spirit of sal ammoniac, which are procurable at an easier rate. But this is by no means the case. The intention is not to purify them wholly from the oil, but to separate the grosser part, and to subtilize the rest, so as to bring it towards the same state as when the oil is rectified by itself. I have repeated the rectification of spirit of hartshorn twenty times successively, and found it still to participate of oil, but of an oil very different from what it was in the first distillation.

The rectified oils, in long keeping, become again fetid. The salts and spirits also, however carefully rectified, suffer in length of time the same change; resuming their original brown colour and ill smell; a proof that the rectification is far from having divested them of oil.

SPIRITUS, SAL, et OLEUM FULIGINIS.

Spirit, salt, and oil of foot.

Lond.

Distil foot after the same manner as directed above for hartshorn: but here more labour is required to render the spirit and salt pure.

THE volatile salt and spirit of foot are, when sufficiently purified, not different in quality from those of animal substances; though some

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have

have preferred them in nervous complaints, particularly in epileptic cases.

SPIRITUS et SAL VOLATILIS SALIS AMMONIACI.

The volatile salt and spirit of sal ammoniac.

Lond.

Take a pound and a half of any fixt alkaline salt, a pound of sal ammoniac, and four pints of water.

Distil off, with a gentle heat, two pints of spirit.

The volatile salt is made from a pound of sal ammoniac mixed with two pounds of pure chalk, and set to sublime in a retort with a strong fire.

ALCALI VOLATILE ex SALE AMMONIACO, vulgo SAL AMMONIACUS VOLATILIS.

Volatile alkali from sal ammoniac, commonly called Volatile sal ammoniac.

Edinb.

Take of

Sal ammoniac, one pound ;

Chalk, very pure and dry, two pounds ;

Mix them well, and sublime from a retort into a refrigerated receiver.

SPIRITUS SALIS AMMONIACI

Spirit of sal ammoniac.

Edinb.

Take of

Sal ammoniac,

Purified vegetable fixed alkali, of each sixteen ounces ;

Water, two pounds.

Having mixed the salts, and put them into a glass retort, pour in the water ; then distil to dryness with a sand-bath, gradually raising the heat.

Sal ammoniac is a neutral salt, composed of volatile alkali and marine acid. In these processes the acid is absorbed by the fixt alkali or chalk ; and the volatile alkali is of course set at liberty.

The volatile alkali is, however, in its mild state ; having caught the fixed air discharged from the fixed alkali or chalk on their uniting with the muriatic acid.

The fixt alkali begins to act upon the sal ammoniac, and extricates a pungent urinous odour as soon as they are mixed. Hence it is most convenient not to mix them till put into the distilling vessel : the two salts may be dissolved separately in water, the solutions poured into a retort, and a receiver immediately fitted on. An equal weight of the fixt salt is fully, perhaps more than sufficient, to extricate all the volatile.

Chalk does not begin to act upon the sal ammoniac till a considerable heat is applied. Hence these may be without inconvenience, and indeed ought to be thoroughly mixed together before they are put into the retort. The surface of the mixture may be covered with a little more powdered chalk, to prevent such particles of the sal ammoniac as may happen to lie uppermost from subliming unchanged. Though the fire must here be much greater than when fixt alkaline salt is used, it must not be too strong, nor too suddenly raised ; for if it is, a part of the chalk (though of itself not capable of being elevated by any degree of heat) will be carried up along with the volatile salt. M. du Hamel experienced the justness of this observation : He relates, in the Memoirs of the French Academy of Sciences for the year 1735, that he frequently found his volatile salt, when a very strong fire was made use of in the sublimation, amount

to more, sometimes one half more, than the weight of the crude sal ammoniac employed; and that, though it is certain that not three-fourths of this concrete are pure volatile salt, the fixt earthy matter, thus once volatilised by the alkali, arose along with it again upon the gentlest resublimation, dissolved with it in water, and exhaled with it in the air.

When all the salt has sublimed, and the receiver grown cool, it may be taken off, and luted to another retort charged with fresh materials. This process may be repeated till the recipient appears lined with volatile salt to a considerable thickness; the vessel must then be broken, in order to get out the salt.

The volatile salt and spirit of sal ammoniac are the purest of all the medicines of this kind. They are somewhat more acrimonious than those produced directly from animal substances, which always contain a portion of the oil of the subject, and receive from thence some degree of a saponaceous quality. These last may be reduced to the same degree of purity, by combining them with acids into ammoniacal salts; and afterwards recovering the volatile alkali from these compounds by the processes above directed.

The matter which remains in the retort after the distillation of the spirit, and sublimation of the salt of sal ammoniac, is found to consist of marine acid united with the fixt alkali or chalk employed. When fixt alkaline salt has been used as the intermedium, the residuum, or *caput mortuum* as it is called, yields, on solution and crystallisation, a salt exactly similar to the *spiritus salis marini coagulatus* hereafter described: and hence we may judge of the extraordinary virtues formerly attributed to this salt, under the names of *sal antihystericum*, *antihy-*

pochondriacum, *febrifugum*, *digestivum Sylvii*, &c.

The *caput mortuum* of the volatile salt, where chalk is employed as an intermedium, exposed to a moist air, runs into a pungent liquor, which proves nearly the same with a solution of chalk made directly in the marine acid; it is called by some *oleum cretae*, oil of chalk. If calcined shells, or other animal limes, be mingled with sal ammoniac, a mass will be obtained, which likewise runs in the air, and forms a liquor of the same kind.

ALCALI VOLATILE CAUSTICUM, vulgo SPIRITUS SALIS AMMONIACI cum CALCE VIVA.

Caustic volatile alkali, commonly called *spirit of sal ammoniac with quicklime*.

Edinb.

• Take of

Quicklime, fresh burnt, two pounds;

Water, one pound.

Having put the water into an iron or stone-ware vessel, add the quicklime, previously beat; cover the vessel for twenty-four hours, whilst the lime falls into a fine powder, which commit to the retort. Then add sixteen ounces of sal ammoniac, diluted with four times its weight of water; then shutting the mouth of the retort, mix them together by agitation. Lastly, distil into a refrigerated receiver, with a very gentle heat, inasmuch that the operator can easily bear the heat of the retort applied to his hands; twenty ounces of liquor are to be drawn off. In this distillation the vessels are to be so luted as thoroughly to exclude the most penetrating vapours. After the distillation, however, they are to be opened, and the alkali poured

out before the retort hath altogether cooled.

The theory of this process is precisely the same with that directed for the preparation of *Lixivium causticum*.

THE effect of the quicklime on the sal ammoniac, is very different from that of the chalk and fixt alkali in the foregoing process. Immediately on mixture, a very penetrating vapour exhales; and in distillation the whole of the volatile salt arises in a liquid form; no part of it appearing in a concrete state, how gently soever the liquor be redistilled. This spirit is far more pungent than the other, both in smell and taste; and, like fixt alkalis rendered caustic by the same intermedium, it raises no effervescence on the admixture of acids. 'The whole of these phenomena are to be ascribed to the absorption of fixed air from the alkali by means of the quicklime.'

This spirit is held too acrimonious for internal use, and has therefore been chiefly employed for smelling to in faintings, &c. tho' when properly diluted, it may be given inwardly with safety. It is a powerful menstruum for some vegetable substances, as Peruvian bark, which the other spirits extract little from. 'It is also most convenient for the purpose of rendering oils miscible with water; as in the preparation of what is called in extemporaneous practice the oily mixture.'

Some have mixed a quantity of this with the officinal spirits both of sal ammoniac and of hartshorn: which thus become more pungent, so as to bear an addition of a considerable quantity of water, without any danger of discovery from the taste or smell. This abuse would be prevented, if what has been formerly laid down as a mark of the strength of these spirits (some of the volatile salt remaining undissolved in them) was complied with. It may be detected by adding to a little of the suspected spirit about one-fourth its quantity or more of rectified spirit of wine: which, if the volatile spirit is genuine, will precipitate a part of its volatile salt, but occasions no visible separation or change in the caustic spirit, or in those which are sophisticated with it.

Others have substituted to the spirit of sal ammoniac a solution of crude sal ammoniac and fixt alkaline salt mixed together. This mixture deposits a saline matter on the addition of spirit of wine, like the genuine spirit; from which, however, it may be distinguished, by the salt which is thus separated not being a volatile alkaline, but a fixt neutral salt. The abuse may be more readily detected by a drop or two of solution of silver made in aquafortis, which will produce no change in the appearance of the true spirit, but will render the counterfeit turbid and milky.

S E C T. III,

Combination of ALKALIS with OILS and INFLAMMABLE SPIRITS.

SAPO AMYGDALINUS.

*Almond soap.**Lond.*

TAKE any quantity of fresh-drawn oil of almonds, and thrice its quantity by measure of the foregoing soap leys. Digest them together in such a heat, that they may but just boil or simmer, and in a few hours they will unite: after which, the liquor in boiling, will soon become ropy, and in good measure transparent; a little of it suffered to cool, will appear like jelly. When this happens, throw in by little and little some common salt, till the boiling liquor loses its ropiness; and continue the coction, till, on receiving some drops on a tile, the soap is found to coagulate, and the water freely separates from it. The fire being then removed, the soap will gradually arise to the surface of the liquor; take it off before it grows cold, and put it into a wooden mould or frame, which has a cloth for its bottom; afterwards take out the soap, and set it by till sufficiently dried.

After the same manner a soap may likewise be made with oil olive; but the purest oil must be used, that the soap may be as little ungrateful as possible either to the palate or stomach.

THIS process is so fully described, as to render any farther directions unnecessary. The general virtues of soaps have been already delivered in page 227: that prepared after this manner is not different in quality from the hard sort there men-

tioned. The strength of soaps varies considerably with their age, and the manner in which they have been kept; fresh soap, though apparently of a good consistence, loses, upon being thoroughly dried, near one-third of its weight; the whole of which loss is mere water; a circumstance to be particularly attended to in the exhibition of this medicine.

Soap is decomposed (or the alkaline salt and oil, of which it is composed, separated from one another) by all acids; and hence it does not lather with waters that contain any acid unneutralized. In pure water, it dissolves into a milky liquor; which, on dropping in some oil of vitriol, forms a kind of coagulum: on adding more of the acid, the liquor becomes clear, the oil of the soap arises to the surface; its alkali uniting with the acid, and forming saline concretions at the bottom. The oil, carefully collected, proves remarkably purer than when it first entered the composition of the soap; and, like the essential oils of vegetables, dissolves in spirit of wine: it may possibly be applicable to some useful purposes, as it seems to be freed from its grosser matter, extremely pure, and is void of the pungency of essential oils.

It follows from the above experiments, that no kind of acid ought to be used along with soap; all acids absorbing the alkaline salt of the soap from the oil. Neutral salts have not this effect, their acid being already satiated with an alkali; but salts composed of an acid and an earthy or metallic body, as the purging bitter salt, vitriol, &c. de-

F f 3 compound

compound the soap equally with pure acids; acids quitting an earth or metal to unite with an alkali brought in contact with them.

Soap dissolves likewise, but in small quantity, in pure spirit of wine: it is observable of this solution, that if exposed to a degree of cold, a very little greater than that in which water begins to freeze, it congeals into a solid pellucid mass.

The menstruum which dissolves soap most perfectly, and in greatest quantity, is a pure proof-spirit. The common proof-spirits have a slight acidity, not indeed distinguishable by the taste or by the usual ways of trial, but sufficient to give somewhat of a milky hue to solutions of soap made in them. This may be corrected by the addition of a little alkaline salt. Mr Geoffroy observes, in the Memoirs of the French Academy, that twenty-eight parts of good proof-spirit, with the addition of one part of salt of kali (see page 440.) will dissolve ten parts of good hard soap into a perfectly limpid liquor. The common alkaline salts, that of tartar, answer equally in this respect with that of kali; but the latter, being much less acrimonious, seems preferable where the solution is intended for medicinal use.

This facility of the decomposition of soap by acids, renders it an useful criterion of low degrees of unneutralized acidity in waters, &c. The limpid solution of soap in proof-spirit, dropt into any liquor, that contains either a pure acid, or a salt composed of an acid with an earth or metal, renders the liquor immediately milky, more or less in proportion to the quantities it is impregnated with.

SAPO PURIFICATUS,

Purified soap.

Slice one pound of dry, hard, Ge-

noa, Alicant, or any other oil-soap, into a clean pewter vessel, and pour upon it two gallons of rectified spirit of wine. Place the vessel in a water-bath, and apply such a degree of heat as may make the spirit boil, when it will soon dissolve the soap. Let the vessel stand close covered, in a warm place, till the liquor has grown perfectly clear; if any oily matter swim upon the surface, carefully scum it off. Then decant the limpid liquor from the feces, and distil off from it all the spirit that will arise in the heat of a water-bath. Expose the remainder to a dry air for a few days, and it will become a white, opaque, and somewhat friable mass. *Pract. Chem.*

SOAP thus purified has little or no smell, and proves, upon examination, not in any degree acrimonious, but quite mild and soft, and consequently well fitted for medicinal purposes.

SAPO TARTAREUS,

Soap of tartar.

Take any quantity of salt of tartar, very well calcined and reduced into powder whilst hot: immediately pour upon it, in a broad glass vessel, twice its quantity of oil of turpentine; and let them stand together in a cellar for some weeks, till the oil has penetrated the salt: then add more oil by degrees, till the salt has absorbed thrice its own quantity, and both appear united into a soap; which, if the matter is every day stirred, will happen in a month or two. The effect succeeds sooner, if the containing vessel be fixed to the sail of a windmill, or any other machine that turns round with great velocity.

THIS

THIS tedious process, which is taken from a former edition of the Edinburgh Pharmacopœia, might be finished in a very little time, by duly attending to a circumstance which our chemists, and the pharmaceutical writers, have in general overlooked; and which many have supposed to be a means even of preventing success. If the oil be poured upon the pulverized salt whilst very hot, they will immediately unite, with a hissing noise; and, by rubbing for a few minutes in a hot mortar, form a truly saponaceous mass, the medicine here intended. If the salt is suffered to grow cold before the addition of the oil, it is scarce possible to unite them, as the committee of the London College observes, without the addition of a little water, which in this case promotes the effect. The regular, uniform motion above recommended, does not answer so well as agitation or rubbing in a mortar; the different degrees of centrifugal force which the oil and salt acquire when moved circularly, tending to keep them apart. The salt does not retain so much of the oil as might be expected; far the greatest part of this volatile fluid being dissipated in the process. Mr Baumé relates, in his *Manuel de Chimie* lately published, that experiments have convinced him, that the soap consists of only the resinous part of the oil united with the alkali; that the more fluid and well rectified the oil is, the less soap is obtained; and that by adding a little turpentine in substance to the mixture, the preparation is considerably accelerated.

This medicine has been greatly celebrated as a diuretic, in nephritic complaints; and as a corrector of certain vegetable substances, particularly opium: it was for some time a great secret in the hands of its first preparer, Starkey, under the names

of Philosophic soap, The vegetable corrector, &c. Its virtues, however, have not been sufficiently warranted by experience; nor does the present practice pay any regard to it. Accordingly both the London and Edinburgh Colleges have rejected it at the late reformation of their Pharmacopœias.

LOTIO SAPONACEA.

Saponaceous lotion.

Lond.

Take of

Damask-rose water, three quarters of a pint;

Oil olive, one quarter of a pint;

Ley of tartar, half an ounce by measure.

Grind the ley of tartar and the oil together until they unite; then gradually add the rose water.

THIS is designed for external use, as a detergent wash; and, like other soapy liquors, answers this purpose very effectually. Where it is required to be more deterfive, it may be occasionally rendered so, by the addition of a small quantity of a solution of any fixt alkaline salt.

LINIMENTUM SAPONACEUM.

Saponaceous liniment.

Lond.

Take of

Spirit of rosemary, one pint;

Hard Spanish soap, three ounces;

Camphor, one ounce.

Digest the soap in the spirit of rosemary until it is dissolved; then add the camphor.

BALSAMUM SAPONACEUM vulgo OPODELDOCH.

Saponaceous balsam, commonly called opodeldoc.

Edinb. +

Take of

Spanish soap, ten ounces;

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Cam-

Camphor, two ounces;
Essential oil of rosemary,
Essential oil of origanum, each
half an ounce;

Rectified spirit of wine, four pints.
Digest the soap in the spirit of wine,
with a gentle heat, till it is dis-
solved; then add the camphor
and the oils, and shake the whole
well together, that they may be
perfectly mixed.

THESE compositions also are em-
ployed chiefly for external purposes,
against rheumatic pains, sprains,
bruises, and other like complaints.
Soap acts to much better advantage,
when thus applied in a liquid form,
than in the solid one of a plaster.

LINIMENTUM VOLATILE.

Volatile liniment.

Lond.

Take of

Oil of almonds, one ounce by
measure;

Spirit of sal ammoniac, two drams
by weight.

Stir them together in a wide-mouth-
ed phial, until they perfectly u-
nite.

EPITHEMA VOLATILE.

Volatile epithem.

Lond.

Take of

Common turpentine,

Spirit of sal ammoniac, each equal
weights.

Stir the turpentine in a mortar, gra-
dually dropping in the spirit, un-
til they unite into a white mass.

EMPLASTRUM VOLATILE.

Volatile plaster.

Edinb. +

Take of

Venice turpentine,

Spirit of sal ammoniac, each one
ounce.

Pour the spirit gradually into the

turpentine, stirring them diligent-
ly together in a mortar.

THE three foregoing are very a-
cid, stimulating compositions, and
are principally applied against rheu-
matic and ischiadic pains. The epi-
them or plaster was formerly made
of a stiffer consistence, and more ad-
hesive, by an addition of tacama-
haca; which is here judiciously o-
mitted, as it prevented the applica-
tion from being so expeditiously got
off from the part as its great irri-
tating power made sometimes ne-
cessary.

SPIRITUS SALIS AMMO- NIACI DULCIS.

Dulcified spirit of sal ammoniac.

Lond.

Take half a pound of any fixt alka-
line salt, four ounces of sal am-
moniac, and three pints of proof-
spirit of wine. Distil off, with a
gentle heat, a pint and a half.

THIS spirit has lately come much
into esteem, both as a medicine and
a menstruum. It is a solution of
volatile salt in rectified spirit of
wine; for though proof-spirit is
made use of, its phlegmatic part
does not arise in the distillation, and
serves only to facilitate the action
of the pure spirit upon the ammo-
niacal salt. Rectified spirit of wine
does not dissolve volatile alkaline
salts by simple mixture: on the con-
trary, it precipitates them, as has
been already observed, when they
are previously dissolved in water:
but by the present process, a consi-
derable proportion of the volatile al-
kali is combined with the spirit. It
might perhaps, for some purposes,
be more advisable to use in this in-
tention the volatile spirit made with
quicklime, as in the subsequent
formula: for this may be mixed at
once with rectified spirit of wine, in
apy

any proportions, without the least danger of any separation of the volatile alkali.

SPIRITUS SALIS AMMONIACI VINOSUS.

Vinous spirit of sal ammoniac.
Edinb.

Take of
Quicklime, sixteen ounces;
Sal ammoniac, eight ounces;
Rectified spirit of wine, thirty-two ounces.

Having slightly bruised and mixed the quicklime and ammoniacal salt, put them into a glass-retort; then add the spirit, and distil in the manner directed for the volatile caustic alkali, till all the spirit has passed over.

SPIRITUS VOLATILIS FÆTIDUS.

The volatile fetid spirit.
Lond.

Take of
Any fixt alkaline salt, a pound and a half;
Sal ammoniac, one pound;
Asafœtida, four ounces;
Proof-spirit of wine, six pints.
Draw off with a gentle heat, five pints.

Edinb.

Take of
Vinous spirit of sal ammoniac, eight ounces;
Asafœtida, half an ounce.
Digest in a close vessel twelve hours; then distil off with the heat of boiling water eight ounces.

THIS spirit (the last formula of which is the best) is designed as an antihysterical, and is undoubtedly a very elegant one. Volatile spirits, impregnated for these purposes with different fetids, have been usually kept in the shops: the ingredient here made choice of, is the best cal-

culated of any for general use, and equivalent in virtue to them all. The spirit is pale when newly distilled, but acquires a considerable tinge in keeping.

SPIRITUS VOLATILIS AROMATICUS.

Volatile aromatic spirit.
Lond.

Take of
Essential oil of nutmegs,
Essence of lemons, each two drams;
Essential oil of cloves, half a dram;
Dulcified spirit of sal ammoniac, one quart;
Distil them with a very gentle fire.

SPIRITUS VOLATILIS AROMATICUS, vulgo SPIRITUS VOLATILIS OLEOSUS, et SPIRITUS SALINUS AROMATICUS.

Volatile aromatic spirit, commonly called volatile oily spirit, and saline aromatic spirit.
Edinb.

Take of
Vinous spirit of sal ammoniac, eight ounces;
Distilled oil of rosemary, one dram and a half;
Distilled oil of lemon-peel, one dram.
Mix them, that the oils may be dissolved.

By the method here directed, the oils are as completely dissolved as when distillation is employed.

Volatile salts, thus united with aromatics, are not only more agreeable in flavour, but likewise more acceptable to the stomach, and less acrimonious, than in their pure state. Both the foregoing compositions turn out excellent ones, provided the oils are good, and the distillation skilfully performed. The dose is from

from five or six drops to sixty or more

Medicines of this kind might be prepared extemporaneously, by dropping any proper essential oil into the dulcified spirit of sal ammoniac, which will readily dissolve the oil without the assistance of distillation, as in the following compositions; in which Jamaica pepper is chosen for the aromatic material, as being a cheap and sufficiently elegant one, and very well adapted to general use.

**SPIRITUS VOLATILIS OLEOSUS
EXTEMPORANEUS.**

Extemporaneous volatile oily spirit.

Take of

Dulcified spirit of sal ammoniac,
one pint;
Essential oil of Jamaica pepper,
two drams.

Mix them together, that the oil may be dissolved.

Or,

Take of

Spirit of wine, highly rectified,
Spirit of sal ammoniac, each half
a pint;
Essential oil of Jamaica pepper,
two drams.

Dissolve the oil in the spirit of wine, and mix this solution with the spirit of sal ammoniac: a white coagulum will be immediately formed, which, in a warm place soon resolves into a transparent liquor, depositing a quantity of a volatile oily salt.

By either of the above methods, a volatile oily spirit may be made occasionally, and adapted, at pleasure, to particular purposes, by choosing an essential oil proper for the intention. Thus, in hysterical

disorders, where the uterine purgations are deficient, a preparation of this kind made with the oils of rue, favin, pennyroyal, or other like plants, proves an useful remedy; for weakness of the stomach, oil of mint may be taken; where a cephalic is required, oil of marjoram, lavender, or rosemary; in coldness and faintings, oil of cinnamon; in cases of flatulence, the oils of aniseeds and sweet fennel seeds. These last greatly cover the pungency of the volatile spirit, and render it supportable to the palate. The spirits thus made by simple mixture, are nowise inferior, in medicinal efficacy, to those prepared by distillation, tho' the tinge which they receive from the oil may render them to some persons less sightly.

**SPIRITUS VOLATILIS SUCCINATUS.
*Succinated volatile spirit.***

Take of

Rectified oil of amber, from twelve
to sixty drops;
Rectified spirit of wine, one
ounce;
Volatile spirit of sal ammoniac
prepared with quicklime,
twelve ounces.

Mix them together, and distil in a retort with a moderate fire.

THIS composition is extremely penetrating, and has lately come into esteem, particularly for smelling to in lownesses and faintings, under the name of *Eau de luce*. It has been hitherto brought from France. It is not quite limpid, for the oil of amber dissolves only imperfectly in the spirit: if the volatile spirit is not exceedingly strong, scarcely any of the oil will be imbibed.

SECT.

S E C T. IV.

A C I D S P I R I T S.

SPIRITUS VITRIOLI tenuis,
et fortis (oleum dictus *E.*) +
atque COLCOTHAR.

*Weak spirit, and the strong spirit or
oil of vitriol, and colcothar.*

Lond.

LET calcined vitriol be distilled
in earthen vessels, with a re-
verberatory fire, for three days
without intermission. What re-
mains in the vessels is called *col-
cothar of vitriol*.

Put the distilled liquor into a glass
retort, and place in it a sand fur-
nace: the weak spirit will come
over, the strong (improperly call-
ed *oil of vitriol*) remaining be-
hind.

Edinb. +

Take any quantity of green vitriol,
calcined to a slight yellow colour,
and reduced into powder. Fill
therewith one half of an earthen
retort, place it in a reverberatory
furnace, fit on a very large receiver,
and lute well the junctures: then
proceed to distillation, gradually
increasing the fire to the utmost
degree, which is to be kept up as
long as any vapours arise.

The phlegm, spirit, and oil impro-
perly so called, may be separated
from each other, by committing
the whole to distillation in a re-
tort placed in a sand furnace.
The phlegm (which will be in
little quantity if the vitriol has
been duly calcined) will arise with
a small degree of heat, and the
spirit with a stronger, leaving the
oil behind.

THE vitriol should be calcined till
it acquires a yellowish colour incli-

ning to red: if calcined only to
whiteness, as has been commonly
directed, it will change in the distil-
ling vessels into a hard compact mass,
from which the due quantity of acid
can never be obtained, though urged
with the most vehement fire for a
great length of time. A retort is
an inconvenient instrument for per-
forming the distillation in: it re-
quires an extraordinary expence of
fuel and time to elevate the ponder-
ous acid of vitriol so high as the
figure of this vessel demands: the
vessels usually employed are so con-
trived, that the vapour passes out la-
terally, without any ascent; these
are called long-necks: the junctures
of them with the receivers may be
luted with Windsor loam, moisten-
ed with a solution of any fixt alkā-
line salt, and then beaten up with a
small quantity of horse-dung. If
the fire is sufficiently strong, the di-
stillation will be finished in much
less than three days, though vapours
will not cease to appear long after
this period: when the process has
been continued for a certain time,
which Boerhaave limits to eighteen
hours, the spirit that arises will not
pay the expence; regard, however,
must be had herein to the size of the
furnace, the quantity of vitriol in
each distilling vessel, and the degree
of heat employed; those who make
this commodity in quantity, conti-
nue the operation no longer than
till the fumes which issue from the
long-necks, at the greatest distance
from the fire, begin to lessen, and
the recipients grow somewhat clear.

This process is not practicable to
advantage without a very large ap-
paratus. Hence it is become a di-
stinct

distinct branch of the chemical business, and considerable works have been erected for it, in such parts of the kingdom as fuel can be most easily procured in; some of the furnaces are so large as to contain a hundred earthen long-necks, or distilling vessels, at once. The metallic part of the vitriol, or colcothar, which remains after the distillation, is ground down in mills,edulcorated with water, and employed as a pigment: in medical virtue, it is not different from some of the calces of iron, to be spoken of hereafter.

The acid spirit, as it arises in the first distillation, appears of a dark or blackish colour, and contains a considerable portion of phlegm. In the second distillation, the phlegmatic parts arise first, together with the lighter acid, which are kept apart under the name of weak spirit: at the same time, the remaining strong spirit, or oil as it is called, loses its black colour, and becomes clear; and this is the usual mark for discontinuing the distillation. Methods of farther purifying this acid for the nicer uses are described in Practical Chemistry, page 144,

**ACIDUM VITRIOLICUM
TENUE, vulgo SPIRITUS
VITRIOLI TENUIS.**

*Weak vitriolic acid, commonly called weak spirit of vitriol.
Edinb.*

‘ Take of
Vitriolic acid, one part;
Water, seven parts.
Mix them.’

THE spirit of vitriol is the most ponderous of all the liquids we are acquainted with; and the most powerful of the acids. If any other acid be united with a fixt alkaline salt or earth, upon the addition of the vitriolic, such acid will be dis-

lodged, and arise on applying a moderate heat, leaving the vitriolic in possession of the alkali; though without this addition, it would not yield to the most vehement fire. Mixt with water, it instantly conceives great heat, insomuch that glass vessels are apt to crack from the mixture, unless it is very slowly performed: exposed to the air, it imbibes moisture, and soon acquires a notable increase of weight. In medicine, it is employed chiefly as subservient to other preparations: it is likewise not unfrequently mixed with juleps and the like, in such quantity as will be sufficient to give the liquor an agreeable tartness in the intentions of a cooling antiseptic, restringent, and stomachic. See page 338.

SPIRITUS SULPHURIS

per campanam.

*Spirit (commonly called oil) of sulphur by the bell.
Lond.*

Let the sulphur be set on fire, under a glass vessel fitted for this use, called a bell; and let the acid spirit, which trickles down from the sides of the bell, be received in a glass dish placed underneath,

Edinb.

Take any quantity of sulphur; melt it in an earthen dish, and dip into it twisted strips of linen, so as to form a sulphurated match. Fasten this in the mouth of a phial, which is to be set in the bottom of a glass or earthen dish, in a moist place screened from the wind: then kindle the sulphur with a red-hot iron; and hang over it a glass bell, at such a distance that the flame may not touch it. The vapour of the sulphur will condense in the bell by the

the cold, and drop down from its sides like water into the vessel placed underneath.

THE glass usually employed for this purpose by the chemists, differs considerably from the bell-shape; its belly is spherical, and has a rim at the bottom, turned inwards a little; the upper part ends in a long open stem: a large receiver, with a hole cut in its bottom, and a long tube inserted into its mouth, would answer as well. If the sulphur happens to burn dull, the glass is taken off, and the matter stirred with an iron wire, or clean tobacco-pipe: as it consumes, fresh quantities are to be supplied, till all the sulphur designed for this use is burnt. The condensation of the fumes depends in great measure upon their imbibing aqueous moisture: hence in wet weather, or a damp place, the operation succeeds best. In dry weather it is customary to moisten the bell, by suspending it for a little time over the steam of boiling water.

This process is sufficiently troublesome, and the yield of acid spirit obtained by it extremely small; greatest part of the fumes escaping into the air, partly at the bottom, and partly through the upper aperture of the bell.

Several contrivances have been made for preventing these inconveniences. One of the best commonly known, is that described in Vol. V. art. 14. of the Edinburgh Essays; instead of the bell, a large retort is employed, having a tubulated receiver (with the pipe turned uppermost) adapted to its neck; instead of the large aperture in the bottom of the bell, a small one is made in the bottom of the retort: and thus by diminishing the aperture, enlarging the capacity of the vessels, and lengthening the passage of the fume,

a considerably larger quantity of the fumes are detained than in the common instruments.

This apparatus may be greatly improved, by cutting the hole in the side of the retort, and pouring into the bottom an ounce or two of warm water, in the middle of which is placed a shallow stone-cup containing the sulphur. The heat of the burning sulphur is soon communicated to the water, so as to keep it continually rising in steam; with this aqueous vapour, the fumes of the brimstone are effectually blended as they ascend; and detained in considerable quantity, in a much less proportion of phlegm than when the common methods are pursued; for here the business of rectification or dephlegmation is carrying on, at the same time that the acid is collecting.

This affair is capable of being much farther improved. In the common method by the bell, in the most favourable circumstances, scarce above two drams of acid spirit are obtained from sixteen ounces of sulphur. By the second apparatus, an ounce may be obtained from the same quantity; and by the other, about two ounces. It appears, however, from experiments related by Stahl and others, that out of sixteen ounces of sulphur, at least fifteen ounces are pure acid, of such strength as to require being diluted with above an equal weight of water, to reduce it to the pitch of common spirit of sulphur. It follows therefore, that if we could contrive a method of burning sulphur, so as to preserve all the fumes, we might obtain from it much more than its own weight, of an acid of the ordinary strength.

The acid obtained from sulphur is in all respects similar to that of vitriol; only that what comes first over is somewhat more volatile, possessing

selling the characters of what is called the *volatile sulphureous acid*. The acid of sulphur, united with iron or copper, forms a true vitriol; and the acid of vitriol, combined with inflammable matters, produces sulphur, not distinguishable from pure common brimstone. The identity of these acids is well known to some particular persons, who supply us with almost all that is now sold under the name of *oil of vitriol, prepared from the fumes of burning sulphur*. The method by which they obtain the acids so plentifully, and at so cheap a rate, from this concrete which has hitherto yielded it so sparingly, differs from the processes above described. Instead of an open bell, or a retort with the mouth open, they use for burning the sulphur in, very large spherical glass vessels blown on purpose, of the size of a hoghead or more, with only one aperture, through which the sulphur is introduced, and which is afterwards immediately closed, till the fumes have subsided and incorporated with the vapour of the warm water placed in the lower part of the vessel.

AQUA SULPHURATA.

*Sulphurated water, usually called
gas sulphuris.*

Lond.

Take a quart of water, and half a pound of sulphur. Let part of the sulphur be set on fire in an iron ladle, and suspended over the water in a close vessel: as soon as the fumes subside, some more of the sulphur is to be fired in the same manner; and this repeated till the whole quantity is burnt.

A convenient way of managing this process is, to put the water into a glass receiver, placed on its side, and to have the ladle contain-

ing the burning sulphur fixed to a plug, made to go freely into the neck of the vessel; the use of the plug is to keep the ladle from dipping into the water; the fumes which issue betwixt it and the glass may be confined by a cloth thrown round the neck.

The water is impregnated, in this process, with a subtle volatile acid, different in many respects from the foregoing spirits of sulphur and of vitriol. The acid may likewise be obtained in the same volatile state, both from vitriol and sulphur without water. If the retort or long-neck, during the distillation of oil of vitriol, happens to crack in the fire, all the acid that rises afterwards, is found to be thus volatilised. If cloths, moistened with a solution of fixt alkaline salt, be suspended over burning brimstone, the acid fumes will be imbibed by the alkali, and form with it a neutral salt: if this neutral salt be rubbed off from the cloths, and some common oil of vitriol poured upon it, the volatile acid it had imbibed from the sulphur will be immediately extricated again, and may be collected by distillation. The acid proves in all these cases so volatile, as to distil in a heat scarcely greater than that which the hand can support: it has a pungent suffocating smell, like that of the fumes of burning brimstone, but discovers to the taste very little acidity or corrosiveness. Exposed for some time to the air, it loses these properties, and becomes a fixt acid, and corrosive like common oil of vitriol.

The *aqua sulphurata* is liable to great uncertainty in point of strength; partly on account of the water being impregnated with a greater or less quantity of the fumes, according as the process is more or less skilfully managed; and partly on account of the above change of the acid

acid from a volatile to a fixt state. When newly prepared, it is highly volatile and pungent, smelling like burning brimstone, but in taste rather bitterish and austere than acid. In keeping, the volatility and smell are lost, and the liquor (sooner or later, according as the air is more or less admitted to it) becomes in all respects the same as water acidulated with a little common oil of vitriol.

This preparation is said to give relief in fits of the convulsive asthma. It is taken to the quantity of a spoonful or half an ounce, two or three times a day, in any suitable vehicle.

SPIRITUS NITRI GLAUBERI.

Glauber's spirit of nitre.

Lond.

Take three pounds of nitre, and one pound of the strong spirit or oil of vitriol. Mix them cautiously and gradually together under a chimney; and then distil, at first with a gentle, and afterwards with a stronger heat.

ACIDUM NITROSUM, vulgo SPIRITUS NITRI GLAUBERI.

Nitrous acid, commonly called Glauber's spirit of nitre.

Edinb.

Take of

Purest nitre, bruised, two pounds;
Vitriolic acid, one pound.

Having put the nitre into a glass retort, pour on it the spirit; then distil in a sand-heat, gradually increased, till the iron sand-pot becomes of a dull red colour.

HERE the vitriolic acid expels that of the nitre, in red corrosive vapours, which begin to issue immediately upon mixture; and which the operator ought cautiously to avoid. A pound of oil of vitriol is suffi-

cient to expel all the acid from about two pounds of nitre, not from more: some direct equal parts of the two. The spirit, in either case, is in quality the same; the difference, in this respect, affecting only the residuum. When two parts of nitre are taken to one of oil of vitriol, the remaining alkaline basis of the nitre is completely saturated with the vitriolic acid; and the result is a neutral salt, the same with vitriolated tartar, as we shall see hereafter. If more nitre is used, a part of the nitre in substance will remain blended with this vitriolated salt: if less nitre, it cannot afford alkali enough to saturate the vitriolic acid, and the residuum will be not a neutral salt, but a very acid one. In this last case there is one conveniency; the acid salt being readily dissoluble in water, so as to be got out without breaking the retort, which the others are not.

ACIDUM NITROSUM TENUE.

Weak nitrous acid.

Edinb.

Take of

Nitrous acid,
Water, equal weights.

Mix them, taking care to avoid the noxious vapours.

THE vapours separated during the mixing of nitrous acid and water, are the permanently elastic fluid called *nitrous acid air*, which is deleterious to animal life.

The acid of nitre is next in strength to the vitriolic, and dissolves all but that from alkaline salts or earths. It differs from all the other acids in deslagrating with inflammable matters: if a solution of any inflammable substance, as hartshorn, &c. in this acid be set to evaporate; as soon as the matter approaches to dryness, a violent detonation

tonation ensues. The chief use of this acid is as a menstruum for certain minerals, and as the basis of some particular preparations, of which hereafter. It has been given likewise, diluted with any convenient vehicle, as a diuretic, from ten to fifty drops.

SPIRITUS SALIS MARINI GLAUBERI.

Glauber's spirit of sea-salt.

Lond.

Take two pounds of sea-salt, and the same quantity of strong spirit or oil of vitriol. Dilute the acid spirit with a pint of water, and pour this mixture by little and little on the salt under a chimney; then distil, at first with a gentle, and afterwards with a stronger fire.

ACIDUM MURIATICUM, vulgo SPIRITUS SALIS MARINI.

*Muriatic acid, commonly called
Spirit of sea-salt.*

Edinb.

• Take of

Sea-salt, two pounds;

Vitriolic acid,

Water, of each one pound.

Let the salt be first put into a pot, and brought to a red heat, that the oily impurities may be consumed; then commit it to the retort. Next mix the acid with the water, and when the mixture has cooled, pour it upon the salt. Lastly, distil in sand with a middling heat, as long as any acid comes over.

In a former edition of the Edinburgh Pharmacopœia, this spirit was directed to be rectified by a second distillation; but the previous burning of the salt in the above process is sufficient to discharge every inflammable matter that should render the acid im-

pure; and the necessity of the second distillation is by this means superseded.

THE marine, or muriatic acid, arises, not in red fumes like the nitrous, but in white ones. The addition of water is more necessary here than in the foregoing process; the marine vapours being so volatile, as scarce to condense without some adventitious humidity. The oil of vitriol is most conveniently mixed with the water in an earthen or stone-ware vessel: for unless the mixture is made exceedingly slowly, it grows so hot as to endanger breaking a glass one.

The spirit of sea-salt is the weakest of the mineral acids, but stronger than any of the vegetable: It requires a greater fire to distil it than that of nitre, yet is more readily dissipated by the action of the air. It is used chiefly as a menstruum for the making of other preparations; sometimes, likewise, it is given, properly diluted, as an antiphlogistic, aperient, and diuretic, from ten to sixty or seventy drops.

SPIRITUS SALIS.

Spirit of salt.

Take a pound of sea-salt, thoroughly dried, and three pounds of powdered bricks. Mix, and put them into an earthen retort, of such a size that these may fill only one half of it. Place the retort in a reverberatory furnace, adapt to it a large receiver, and lute well the junctures. Let the fire be applied, at first very sparingly, and afterwards increased by degrees, until all the spirits are driven over in the form of clouds. When the vessels are grown cold, pour out the distilled liquor into a glass cucurbit, and gently abstract from it the phlegm, which will leave the spirit pure.

INSTEAD of brickdust, some have used solar earths and clays. It has been supposed, that these substances act by discontinuing and dividing the particles of the salt, so as to enable the fire to expel the spirit. If this was true, glass or sand would prove equally serviceable, and the same intermedium would answer as well for a number of times as at first; the reverse of which, experiments show to be true. Brick-earth, and other substances of this kind, contain a small quantity of vitriolic acid, whose known property it is to disengage the acid of sea-salt, and which is the only part of them of use in this process. The quantity of spirit therefore obtained by these intermedia, is only in proportion to that of the acid contained in them, which is extremely small. This has occasioned some to make use of vitriol, as containing a larger quantity of the vitriolic acid: But though vitriol is in this respect greatly preferable to brickdust or the argillaceous earths, yet in another it is found less eligible; its metallic part so strongly adheres to the marine acid, as to keep it down after it has separated from its basis, or else arises along with it, and defiles the product. These methods therefore of extracting the spirit of salt have been for some time laid aside; the foregoing, in which the pure vitriolic acid itself is used, being in all respects more convenient and advantageous.

AQUA FORTIS.

Lond.

Take of
Nitre,
Green vitriol, uncalcined, each
three pounds;
The same vitriol, calcined, one
pound and a half.
Mix them well together, and distil

with a very strong fire, as long
as any red vapour arises.

AQUA FORTIS SIMPLEX.

*Single aquafortis.**Edinb. +*

Take two parts of vitriol calcined to whiteness, and one part of powdered nitre; mix them very well together, and fill therewith an earthen retort to two thirds; then fit on a large receiver, and proceed to distillation: which is to be performed in the same manner as directed for spirit of salt.

THE vitriol here, is not liable to the inconvenience mentioned in the foregoing remark; it only occasions a greater heat to be necessary than when the pure vitriolic acid is used, for the acid of the vitriol must be extricated before it can act on the nitre: the fire, however, must not be extremely strong, otherwise some of the metallic parts of the vitriol will be forced over along with the nitrous acid. The direction of thoroughly mixing the ingredients ought to be well attended to; for if this is neglected, or but slightly performed, the due quantity of acid will not be obtained. The produce of these processes is a spirit of nitre, containing so much more phlegm or watery moisture than Glauber's spirit, as the vitriol employed in its preparation does more than an equivalent quantity of oil of vitriol.

AQUA FORTIS DUPLEX.

*Double aquafortis.**Edinb. +*

Take of
Green vitriol, calcined to whiteness,
Clay, dried and powdered,
G g Pow.

Powdered nitre, of each equal parts.
Mix them well together, and distil in an earthen retort as above.

THIS process is an unartful one. The clay appears to be of very little use, though the contrivers of the process seem, from the reduction of the vitriol, to have laid considerable stress on it: all it can do is to hinder the melting of the salts. It would doubtless be better to omit the clay, and increase the quantity of the vitriol; which, in order to make the aquafortis of the strength here intended, should undergo a farther degree of calcination.

The above processes are no more than different forms of preparing an impure nitrous acid, unfit for pharmaceutical purposes. All of them may therefore be superseded by the more simple and proper formulæ directed for the *Acidum nitrosum* and *Acidum nitrosum tenue*.

The great demand which there is in sundry businesses for aquafortis, has occasioned the preparation of it to become a trade by itself. Hence larger and less expensive instruments than those mentioned above, have been contrived. The common distilling vessel is a large iron pot, with an earthen or stone-ware still-head, to which is adapted a large glass globe, or else a jar made of the same kind of clay as the head. The workmen are not at the trouble either of drying the vitriol, or pounding the nitre, but throw them both promiscuously into the pot, where the fire soon liquefies and mixes them together. The aquafortis, prepared after this manner, is extremely impure, and utterly unfit for many purposes; such in particular are the solution of mercury and silver. The violence of the fire employed in the operation, never fails to elevate some of the metallic

parts of the vitriol; the nitre is used rough or unrefined, which containing a portion of sea-salt, sends over some of the marine along with the nitrous acid; nor are the ingredients free from bits of wood, or other vegetable matters, which burning in the process, foul the spirit with an empyreumatic oil, giving it at the same time an high colour. If therefore common aquafortis be employed in any medicinal preparation, it ought to be previously purified; the most effectual method of doing which is the following.

AQUA PORTIS PURIFICATA.

Purified aquafortis.

Drop into the aquafortis a drop or two of solution of silver. If it becomes milky or cloudy, drop in a little more of the solution, till a fresh addition occasions no further change; allowing proper intervals for the white matter to settle, that the effect of a new addition may be the better perceived. Then pour the liquor into a glass retort, and distil in a sand-heat to dryness.

THE milkiness produced by the solution of silver is a certain mark of marine or vitriolic acid in the aquafortis; the silver absorbing those acids, and forming with them a concrete which the liquor is incapable of holding dissolved. If the aquafortis is not made at all cloudy by this solution, we may be certain of its having been previously free from the least admixture of those heterogeneous acids; and when it ceases to become milky from a fresh addition, we may be equally certain, that how much soever it might have contained of them at first, they are now perfectly separated.

The solution of silver is to be made in aquafortis already purified. Where this cannot be had, the little

quan-

quantity generally sufficient for the present purpose may be made in the common impure sort of aquafortis, which will be purified during the dissolution itself. Put a thin bit of silver into a little of the aquafortis, and set the vial in a sand-heat: If the aquafortis is pure, numerous minute bubbles will issue from the silver on all sides, and the metal will gradually dissolve without altering the transparency of the liquor: but if the aquafortis contains marine or vitriolic acid, it will quickly become milky, those acids uniting with the silver, as in the above process, as fast as the nitrous acid dissolves it. As the white matter precipitates upon, and adheres to the surface of the silver, so as to impede the further action of the menstruum, the liquor must be filtered and treated in the same manner with a bit of fresh silver; if any milkiness still ensues, the operation must be repeated with another piece of the metal, till all the foreign acids are separated, and the silver is found to dissolve clear. Good aquafortis takes up about half its own weight of silver.

The silver may be recovered from the white settlings, without any considerable loss, by the following method.

Let the matter be thoroughly dried, then mixed with a little potash, and the mixture made into a paste with oil. Put this paste into a crucible, surrounding it every where with a little more potash. Set the crucible in a proper furnace, and gradually raise the fire, so as to bring the whole into fusion. When the crucible is grown cold, a lump of fine silver will be found in the bottom.

AQUA FORTIS COMPOSITA.

Compound aquafortis.

Lond.

Take sixteen ounces of aquafortis, and one dram of sea-salt. Distil them to dryness.

THIS is designed as a menstruum for quicksilver, for the preparation of the red mercurial corrosive, or red precipitate, as it is called; which the marine acid in this compound liquor renders of a more sparkling appearance, and more beautiful to the eye, than when made with the nitrous acid alone.

AQUA REGIA.

Edinb. +

Put an ounce of powdered sal ammoniac into a large cucurbit, and add to it, by little and little at a time, four ounces of spirit of nitre or double aquafortis. Let them stand together in a sand-heat till the salt is entirely dissolved.

THE glass in which the mixture is made should be placed under a chimney (to carry up the offensive vapour) and its orifice by no means stopp'd till such time as the salt is perfectly dissolved, and the fumes cease to arise with impetuosity. These cautions are extremely necessary, if the process be conducted according to the directions above. But if the sal ammoniac, finely powdered, be gradually added to the acid spirit (which ought to be of a middle degree of strength between single aquafortis and strong spirit of nitre) the solution will proceed without any inconvenience, and may be finished in a reasonable compass of time, provided the mixture be now and then stirred.—The only use of aqua regia and the aqua-

G g 2

fortis,

fortis, is as menstrua for certain mineral substances.

'Aqua regia is a mixture of the nitrous and muriatic acids; but when prepared in the manner here directed, the alkali of the sal ammoniac joins to part of the nitrous acid, whereby the aqua regia contains a quantity of nitrous ammoniacal salt: this neutral salt does not injure the dissolving powers of the liquor, and this is the least expensive manner of preparing it; but it may produce considerable differences in the nature of the precipitates made from solutions of metals in this menstruum, either by a portion of it adhering to the precipitates, or by separating from them any metallic substances which it is capable of dissolving. When therefore we want a pure aqua regia, it is best made, either by mixing the nitrous with the muriatic acid, or by distilling the nitrous from salts containing the muriatic acid, such as the one above directed, viz. sal ammoniac, or common salt. The proportions of the two acids are also to be varied according to the different purposes for which the aqua regia is intended; the greater the proportion of marine acid, the dissolving power of the aqua regia is in general the less: but we frequently use such a quantity of the nitrous acid, that the liquor contains the two acids, each retaining its peculiar manner of acting and forming particular salts with all the bodies exposed to their action. On this account we are at a loss to ascertain the precise condition of certain metallic solutions, or their precipitations from this menstruum. Whether we suppose that the nitrous acid abstracts phlogiston from, or communicates a redundancy of pure air to, the muriatic acid, it is agreed on the principles of both theories, that the peculiar dissolving powers of

aqua regia are very entirely to be ascribed to some change made on the muriatic acid. This is the more evident, since a liquor, possessing all the properties of the best aqua regia, can be obtained without the intervention of the nitrous acid; and this is done by distilling the acid over the calx of the semi-metal called *manganese*. Thus prepared, it is called by Mr Scheele the *dephlogisticated marine acid*; and for the pharmaceutical purposes, to be afterwards noticed, it is preferable to the aqua regia prepared by a mixture of the two acids. See 'TARTARUM EMETICUM.'

ACETUM DESTILLATUM, vel SPIRITUS ACETI.

Distilled vinegar, or spirit of vinegar.
 Lond.

Let vinegar be distilled with a gentle heat as long as the drops fall free from an empyreuma.

If some part of the spirit which comes over first be thrown away, the rest will be the stronger.

Edinb.

'Let eight pounds of vinegar be distilled in glass vessels with a gentle heat. Let the two first pounds that come over be thrown away as containing too much water; let four pounds next following be reserved as the distilled vinegar. What remains is a still stronger acid, but too much acted on by the heat.'

THIS process may be performed either in a common still with its head, or in a retort. The better kinds of wine vinegar should be made use of: those prepared from malt liquors, however fine and clear they may seem to be, contain a large quantity of a viscous substance, as appears from the sliminess and ropiness to which they are very
much

much subject: this not only hinders the acid parts from arising freely, but likewise is apt to make the vinegar boil over into the recipient, and at the same disposes it to receive a disagreeable impression from the fire. And indeed, with the best kind of vinegar, if the distillation be carried on to any great length, it is extremely difficult to avoid an empyreuma. The best method of preventing this inconvenience is, if a retort be made use of, to place the sand but a little way up its sides, and when somewhat more than half the liquor is come over, to pour on the remainder a quantity of fresh vinegar equal to that of the liquor drawn off. This may be repeated three or four times; the vinegar supplied at each time being previously made hot. The addition of cold liquor would not only prolong the operation, but also endanger breaking the retort. If the common still is employed, it should likewise be occasionally supplied with fresh vinegar in proportion as the spirit runs off; and this continued until the process can be conveniently carried no farther: The distilled spirit must be rectified by a second distillation in a retort or glass alembic; for although the head and receiver be of glass or stone-ware, the acid will contract a metallic taint from the pewter worm.

The residuum of this process is commonly thrown away as useless, although, if skilfully managed, it might be made to turn to good account; the most acid parts of the vinegar still remaining in it. Mixed with about three times its weight of fine dry sand, and committed to distillation in a retort, with a well-regulated fire, it yields an exceeding strong acid spirit, together with an empyreumatic oil, which taints the spirit with a disagreeable odour.

This acid is nevertheless, without any rectification, better for some purposes (as a little of it will go a great way) than the pure spirit; particularly for making the sal diureticus of the London Dispensatory; for there the oily matter, on which its ill flavour depends, is burnt out by the calcination.

The spirit of vinegar is a purer and stronger acid than vinegar itself, with which it agrees in other respects. The medical virtues of these liquors may be seen in the section of acids, page * 83, and under the the article ACETUM, page 68. Their principal difference from the mineral acids consists in their being milder, less stimulating, less disposed to affect the kidneys and promote the urinary secretions, or to coagulate the animal juices. The matter left after the distillation in glass vessels, though not used in medicine, would doubtless prove a serviceable detergent saponaceous acid; and in this light it stands recommended by Boerhaave.

ACIDUM TARTAREUM PURUM.

Pure tartarous acid.

‘ If cream of tartar be dissolved in a sufficient quantity of boiling water, and fine chalk in powder added to it till the effervescence ceases, a copious white sediment will fall to the bottom, and the liquor which remains over it will, by evaporation, afford soluble tartar. The sediment is a combination of the tartarous acid with the calcareous earth. If on this sediment, or tartarous selenite, we pour a sufficient quantity of diluted vitriolic acid, this last attaches itself to the chalk, forming a vitriolic selenite, and the disengaged tartarous acid swims at top. We have then the

pure tartarous acid free from the vegetable alkali, with which it is united in the native tartar and in the cream of tartar. The tartarous acid, thus disengaged, may be inspissated and formed into crystals which are not deliquescent in the air. As the combination of the tartarous acid with chalk is a selenite possessing very little solubility, Mr Bergman proposes, for the separation of the acid, to wash this selenite or sediment with distilled water; then putting it into a phial with eight times its weight of a liquor formed of one part of vitriolic acid and eight parts of water. This mixture is digested twelve hours, and frequently stirred with a wooden spatula; the clear liquor above the sediment is poured off, and the sediment repeatedly washed with water till it has no taste, and the different leys are mixed together. But as the ley always contains a small quantity of vitriolic acid, it is to be purified from it by adding a quantity of tartarous selenite, part of which may be reserved for that purpose. For decomposing the solution of cream of tartar, Dr Black has found that quicklime is preferable to chalk, the quicklime absorbing the whole of the tartarous acid, whereby the supernatant liquor, instead of being a solution of soluble tartar, only contains the alkaline part of the tartar. By this method, then, we have

a larger quantity of acid in the sediment.

‘Tartarous acid has not hitherto been much employed in its pure state. As its quantity, in the cream of tartar, may probably vary under different circumstances, we should suppose that the pure acid might be used with more certainty for the preparation of emetic tartar, and such like nice purposes.’

AQUA MEPHITICA.

Mephitic water, commonly so called; or *water impregnated with fixed air, or aerial acid*.

‘This liquor is prepared by receiving fixed air or aerial acid into vessels full of water, inverted in a basin containing the same. The fixed air is separated from various substances, and by different acids; but those most commonly employed are chalk and diluted vitriolic acid. The apparatus most convenient for preparing this liquor is an instrument contrived by Mr Nooth, and which we think should be kept in every laboratory. We cannot here describe this instrument, or the manner of using it; both are sufficiently simple, and pretty generally known. Water thus impregnated with fixed air has an agreeable acidulous taste, and might be kept in the shops as at least an excellent vehicle for many other medicines. See the article FIXED AIR.’

S E C T. V.

COMBINATION OF ACID WITH VINOUS SPIRITS.

ALL the mineral acids, on being mixed with spirit of wine, raise a great ebullition and heat. If the acid is in small quantity, it u-

nites intimately with the vinous spirit, so as to arise with it in distillation. The taste and all the characters of acidity are destroyed; and the

the mixture acquires a grateful flavour, which neither of the ingredients had before.

SPIRITUS VITRIOLI DULCIS.

Dulcified spirit of vitriol.

Lond.

Take of the strong spirit or oil of vitriol, one pound; of rectified spirit of wine, one pint. Cautiously mix them together by little and little at a time, and distil the mixture, with a very gentle heat, till a black froth begins to arise; then immediately remove the whole from the fire, lest this froth should pass over into the recipient and frustrate the operation.

ACIDUM VITRIOLICUM VINOSUM, vulgo SPIRITUS VITRIOLI DULCIS.

Vinous vitriolic acid, commonly called Dulcified spirit of vitriol.

Edinb.

Take of

Vitriolic ethereal liquor, one part;

Rectified spirit of wine, two parts.

Mix them.

‘This is a very ready and convenient method of preparing the dulcified spirit of vitriol, which only differs from ether by the acid being more predominant, and less intimately combined.’

The different proportions of the acid spirit to the vinous in the first process, makes no variation in the quality of the produce, provided the distillation is duly conducted; all the redundant acid being left in the residuum.

A good deal of caution is requisite in mixing the two liquors. Some direct the spirit of wine to be put first into the retort, and the oil of

vitriol to be poured upon it all at once; a method of procedure by no means advisable, as a violent heat and ebullition always ensue, which not only dissipate a part of the mixture, but hazard also the breaking of the vessel, to the great danger of the operator. Others put the oil of vitriol into the retort first; then by means of a funnel, with a long pipe that may reach down just to the surface of the acid, pour in the spirit of wine: if this is done with sufficient caution, the vinous spirit spreads itself on the surface of the oil of vitriol, and the two liquors appear distinct. On standing for a week or two, the vinous spirit is gradually imbibed, without any commotion, and the vessel may then be safely shaken to complete the mixture: but if the spirit is poured in too hastily at first, or if the vessel is moved before the two liquors have in some degree incorporated, the same effect ensues as in the foregoing case. The only secure way is, to add the oil of vitriol to the spirit of wine by a little quantity at a time, waiting till the first addition is incorporated before another quantity is put in: by this management, the heat that ensues is inconsiderable, and the mixture is effected without any inconvenience.

The distillation should be performed with an equable and very gentle heat, and not continued so long as till a black froth begins to appear: for before this time, a liquor will arise of a very different nature from the spirit here intended. The several products are most commodiously kept apart by using a tubulated receiver, so placed, that its pipe may convey the matter which shall come over into a vial set underneath. The juncture of the retort and recipient is to be luted with a paste made of linseed meal, and further secured by a piece of

wet bladder; the lower juncture may be closed only with some soft wax, that the vial may be occasionally removed with ease.

The true dulcified spirit arises in thin subtile vapours, which condense upon the sides of the recipient in straight striæ. It is colourless as water, very volatile, inflammable, of an extremely fragrant smell, in taste somewhat aromatic.

After the fire has been kept up for some time, white fumes arise; which either form irregular striæ, or are collected into large round drops like oil: On the first appearance of these, the vial (or the receiver, if a common one is made use of) must be taken away. If another be substituted, and the distillation continued, an acid liquor comes over, of an exceeding pungent smell, like the fumes of burning brimstone. At length a black froth begins hastily to arise, and prevents our carrying the process further.

On the surface of the sulphureous spirit; is found swimming a small quantity of oil, of a light yellow colour, a strong, penetrating, and very agreeable smell. This oil seems to be nearly of the same nature with the essential oils of vegetables. It readily and totally dissolves in rectified spirit of wine, and communicates to a large quantity of that menstruum the taste and smell of the aromatic or dulcified spirit.

The matter remaining after the distillation is of a dark-blackish colour, and still highly acid. Treated with fresh spirit of wine, in the same manner as before, it yields the same productions; till at length all the acid that remains unvolatilized being satiated with the inflammable oily matter of the spirit, the compound proves a bituminous sulphureous mass; which, exposed to the fire in open vessels, readily burns, leaving a considerable quantity of

fixt ashes; in close ones, explodes with violence; and with fixt alkaline salts, forms a compound nearly similar to one composed of alkalis and sulphur.

Dulcified spirit of vitriol has been for some time greatly esteemed, both as a menstruum and a medicine. It dissolves some resinous and bituminous substances more readily than spirit of wine alone, and extracts elegant tinctures from sundry vegetables; especially if rectified, as in the second of the above processes, from a little fixt alkaline salt, to separate any redundant acidity. As a medicine, it promotes perspiration and the urinary secretion, expels flatulences, and in many cases abates spasmodic strictures, eases pains, and procures sleep. The dose is from ten to eighty or ninety drops in any convenient vehicle. It is not essentially different from the celebrated anodyne liquor of Hoffman; to which it is, by the author himself, not unfrequently directed as a succedaneum.

LIQUOR ANODYNUS MINERALIS HOFFMANNI.

*Hoffman's mineral anodyne liquor.
Paris.*

Into half a pound of concentrated oil of vitriol, placed in a large glass retort, pour by little and little, through a long-stemmed funnel, one pint and a half of highly rectified spirit of wine. Stop the mouth of the retort, digest for some days, and then distil with a very gentle heat. At first a fragrant spirit or wine will arise; and after it, a more fragrant volatile spirit, to be caught in a fresh receiver. The receiver being again changed, a sulphureous, volatile, acid phlegm comes over; and at length a *sweet oil of vitriol*, which should be immediately separated, lest it be absorb-

ed

ed by the phlegm. Mix the first and second spirits together, and in two ounces of this mixture dissolve twelve drops of the sweet oil. If the liquor has any sulphureous smell, redistil it from a little salt of tartar.

WHETHER this is the exact preparation, so much recommended and so often prescribed by Hoffman as an anodyne and antispasmodic, we cannot determine. We learn from his own writings, that his anodyne liquor was composed of the dulcified spirit of vitriol, and the aromatic oil which arises after it; but not in what proportions he mixed them together. The college of Wirtemberg seem to think, that all the oil was mixed with all the spirit obtained in one operation, without regard to the precise quantities.

AQUA RABELLIANA.

Eau de Rabel.

Paris.

Take four ounces of oil of vitriol, and twelve ounces of rectified spirit of wine. Pour the vinous spirit gradually into the acid, and digest in a close matras.

THIS liquor has been greatly celebrated in France as a restringent, and for the same purposes as the dulcified spirit; from which it differs in having a considerable acidity.

*LIQUOR ÆTHEREUS
VITRIOLICUS.*

Vitriolic ethereal liquor.

Edinb.

Take of
Rectified spirit of wine,
Vitriolic acid, of each thirty-two ounces.

Pour the spirit into a glass retort fit for sustaining a sudden heat, and add to it the acid in an uniform

stream. Mix them by degrees, frequently shaking them moderately; this done, instantly distil from sand previously heated for that purpose, into a receiver kept cool with water or snow. But the heat is to be so managed, that the liquor shall boil at first, and continue to boil till sixteen ounces are drawn off; then let the retort be raised out from the sand. To the distilled liquor add two drams of the causticum commune acerrimum; then distil again in a highly raised retort with a very gentle heat, into a cool receiver, until ten ounces have been drawn off.

If sixteen ounces of rectified spirit of wine is poured upon the acid remaining in the retort after the first distillation, an ethereal liquor may be obtained by repeating the distillation. This may be done pretty often.

THE preparation of this singular fluid, now received into a public pharmacopœia, was formerly confined to a few hands; for though several processes have been published for obtaining it, the success of most of them is precarious, and some of them are accompanied also with danger to the operator. 'The principal difficulty consists in the first part of the distillation. For preparing the dulcified spirit by the method directed by the London College,' the distillation is performed with an equable and gentle heat: here the fire should be hastily raised, so as to make the liquor boil; for on this circumstance the produce of either principally depends. (See a paper on this subject by Dr Morris, in the second volume of the Medical Observations and Inquiries, published by a society of physicians in London. 'It has been usual to direct the heat to be kept up till a black

black froth begins to appear; but if it is managed in the manner here directed, the quantity of ether which the liquor can afford will be formed and drawn off before this sulphureous froth appears. The use of the caustic alkali, is to engage any uncombined vitriolic acid which may be present in the first distilled liquor. If a mild alkali were employed for this purpose, the separation of its air by the acid might endanger the bursting of the vessels. This last is indeed an inconvenience which attends the whole of this process. It might in a great measure be obviated by employing a range of receivers, such as the *adopszer* described in the first part of this Work.

THE ether, or ethereal spirit, is the lightest, most volatile and inflammable, of all known liquids. It is lighter than the most highly rectified spirit of wine, in the proportion of about 7 to 8: a drop, let fall on the hand, evaporates almost in an instant, scarcely rendering the part moist. It does not mix, or only in a small quantity, with water, spirit of wine, alkaline lixivia, volatile alkaline spirits, or acids; but is a powerful dissolvent for oils, balsams, resins, and other analogous substances: 'it is the only known substance capable of dissolving the *elastic gum*.' It has a fragrant odour, which, in consequence of the volatility of the fluid, is diffused through a large space. It has often been found to give ease in violent headaches, by being applied externally to the part; and to relieve the tooth-ach, by being laid on the afflicted jaw. It has been given also internally, with benefit, in whooping coughs, hysterical cases, 'in asthma, and indeed in almost every spasmodic affection, from drops to the quantity of half an ounce,' in a glass of

wine or water; which should be swallowed as quick as possible, as the ether so speedily exhales.

SPIRITUS NITRI DULCIS.

Dulcified spirit of nitre.

Lond.

Take a quart of rectified spirit of wine, and half a pound of Glauber's spirit of nitre. Mix them, by pouring the nitrous spirit into the other; and distil with a gentle heat, as long as the liquor which comes over does not raise any effervescence with lixivial salts.

ACIDUM NITRI VINOSUM, vulgo SPIRITUS NITRI DULCIS.

Vinous acid of nitre, commonly called Dulcified spirit of nitre.

Edinb.

'Take of
Rectified spirit of wine, three pounds;
Nitrous acid, one pound.
' Pour the spirit into a capacious phial, placed in a vessel full of cold water, and add the acid by degrees, constantly agitating them. Let the phial be slightly covered, and laid by for seven days in a cool place; then distil the liquor with the heat of boiling water into a receiver kept cool with water or snow, till no more spirit comes over.

'By allowing the acid and rectified spirit to stand for some time the union of the two is not only more complete, but the danger also of the vessels giving way to the ebullition and heat consequent on their being mixed, is in a great measure prevented. By fixing the degree of heat to the boiling point, the superabundant acid matter is left in the retort, being too ponderous to be raised by that degree of heat.'

Here

HERE the operator must take care not to invert the order of mixing the two liquors, by pouring the vinous spirit into the acid; for if he should, a violent effervescence and heat would ensue, and the matter be dispersed in highly noxious red fumes. The most convenient and safe method of performing the mixture seems to be, to put the inflammable spirit into a large glass body with a narrow mouth, placed under a chimney, and to pour upon it the acid, by means of a glass funnel, in very small quantities at a time; shaking the vessel as soon as the effervescence ensuing upon each addition ceases, before a fresh quantity is put in: by this means, the glass will heat equally, and be prevented from breaking. During the action of the two spirits upon one another, the vessel should be lightly covered: if close stopt, it will burst; and if left entirely open, some of the more valuable parts will exhale. Lemery directs the mixture to be made in an open vessel; by which unscientific procedure, he usually lost, as he himself observes, half his liquor; and we may presume, that the remainder was not the medicine here intended.

Several methods have been contrived for obviating the inconveniences arising from the elastic fluid and violent explosions produced on the mixture of the nitrous acid and rectified spirit of wine: for preparing the nitrous ether they are absolutely necessary, and might perhaps be conveniently used for making the dulcified spirit. The method we judge to be the best, is that employed by Dr Black. On two ounces of the strong acid put into a phial, the Doctor pours, slowly and gradually, about an equal quantity of water; which, by being made to trickle down the sides of the phial, floats on the surface of

the acid without mixing with it; he then adds, in the same cautious manner, three ounces of highly rectified spirit of wine, which in its turn floats on the surface of the water. By this means the three fluids are kept separate on account of their different specific gravities, and a stratum of water is interposed between the acid and spirit. The phial is now set in a cool place: the acid gradually ascends, and the spirit descends through the water, this last acting as a boundary to restrain their violent reaction on each other. By this method a quantity of nitrous ether is formed, without the danger of producing elastic vapours or explosion.

For the preparation of the dulcified spirit, the liquors, when mixed together, should be suffered to rest for some time, as above directed, that the fumes may entirely subside, and the union be in some measure completed. The distillation should be performed with a very slow and well regulated fire; otherwise the vapour will expand with so much force as to burst the vessels. Wilson seems to have experienced the justness of this observation; and hence directs the juncture of the retort and receiver not to be luted, or but slightly: if a tubulated recipient, with its upright long pipe, be made use of, and the distillation performed with the heat of a water-bath, the vessels may be luted without any danger: this method has likewise another advantage, as it ascertains the time when the operation is finished: examining the distilled spirit every now and then with alkaline salts, as directed above, is sufficiently troublesome; whilst in a water-bath we may safely draw over all that will arise, for this heat will elevate no more of the acid than what is dulcified by the vinous spirit.

Dulcified spirit of nitre has been long

long held, and not undeservedly, in great esteem. It quenches thirst, promotes the natural secretions, expels flatulences, and moderately strengthens the stomach: it may be given from twenty drops to a dram, in any convenient vehicle. Mixed with a small quantity of spirit of hartshorn, the spiritus volatilis aromaticus, or any other alkaline spirit, it proves a mild, yet efficacious, diaphoretic, and often notably diuretic; especially in some febrile cases, where such a salutary evacuation is wanted. A small proportion of this spirit added to malt spirits, gives them a flavour approaching to that of French brandy.

SPIRITUS SALIS DULCIS.

Dulcified spirit of salt.

Edinb. +

This is made with spirit of salt, after the same manner as dulcified spirit of nitre.

THE dulcification of the spirit of salt does not succeed so perfectly as that of the two foregoing acids, only a minute portion of it uniting with the spirit of wine, and unless the process is skilfully managed, scarce any. Some have held this spirit in great esteem against weakness of the stomach, indigestion, and the like, following from hard drinking; at present it is not often made use of or kept in the shops.

S E C T. VI.

NEUTRAL SALTS.

WHEN any acid and any alkaline salts are mixed together, in such proportion that neither of them may prevail, they form by their coalition a new compound, called NEUTRAL. In all the combinations of this kind (except some of those with vegetable acids) the alkali and acid are so strongly retained by one another, that they are not to be disunited by any degree of fire. How volatile soever the acid was by itself, if combined with a fixt alkali, it proves almost as fixt as the pure alkali: if the alkali is of the volatile kind, the compound proves also volatile, subliming in its whole substance, without any separation of its parts. There are, however, means of procuring this disunion, by the intervention of other bodies, as we have already seen in the separation of the volatile alkali of sal ammoniac, and of the acids of nitre and sea-salt: but in all cases of this kind, only one of the ingre-

dients of the neutral salt can possibly be obtained by itself, the separation of this happening solely in virtue of the superadded body uniting with the other.

There is another kind of compound salts, formed by the coalition of acids with earthy and metallic bodies. These salts differ from the true neutral ones in several obvious properties; some of them change blue vegetable juices to a green like alkalis, and others to a red like acids, while neutral salts make no change in the colour: mixed with boiling milk, they coagulate it, while neutral salts rather prevent its coagulation: from most of them, the acid is disunited by fire, without the intervention of any additional matter, of which we have seen an instance in the distillation of the acid of vitriol: but the most distinguishing and universal character of these salts is, that solutions of them, on the addition of any fixt alkali, grow turbid,

turbid, and deposit their earth or metal. It were to be wished that custom had appropriated some particular name to the salts of this class, to prevent their being confounded, which several of them have often been, with the perfect neutral salts. See Table of ATTRACTIONS.

	VITRIOLIC ACID.	NITROUS ACID.	MARINE ACID.	ACETOUS ACID.
COMMON FIXT ALKALI.	Vitriolated tartar.	Common nitre.	Regenerated sea-salt.	Sal diure- ticus.
ALKALI OF SEA-SALT.	Glauber's salt.	Cubical nitre.	Sea-salt.	A salt similar to sal diuret.
VOLATILE ALKALI.	Philosophic sal ammon.	Volatile nitre.	Sal ammo- niac.	Spiritus Mindereri.
CALCAREOUS EARTH.	Selenites.	Calcareous nitre.	Calcareous muriatic salt.	A subastrin- gent salt.
MAGNESIA.	Sal catharti- cus amarus.	Purging salts, not distinguished by any particular name.		
Soluble earth of CLAY.	Alum.	Astringent salts, not distinguished by any particular name.		

The preceding table exhibits, at one view, the several compound salts resulting from the union of each of the pure acids with each of the common alkalis and soluble earths; the acids being placed on the top, the alkalis and earths on the left hand, and the compound salts in the respective intersections; and is thus to be understood. In the upright columns, under each of the acids, are seen the several compound salts resulting from the union of that acid with the respective alkalis and earths on the left side. In the transverse columns, opposite to each particular alkali and earth, are seen the compound salts resulting from the union of that alkali or earth with the respective acids on the top; and conversely, of each of the compound salts expressed in the table, the component parts are found on the top of the upright column; and on the left side of the transverse column,

in whose intersection that particular salt is placed. Some of these salts have been already treated in the *Materia Medica*; but it was thought proper to unite them here into one view, for the greater perspicuity in regard to their composition, and the different properties which their component parts assume in different combinations.

Crystallization of salts.

THIS is a general operation on neutral and most of the other compound salts. It depends upon these principles: that water, of a certain degree of heat, dissolves, of any particular salt, only a certain determinate quantity; that on increasing the heat, it dissolves more and more (except only in one instance, common salt) till it comes to boil, at which time both its heat and dissolving power are at their height: that

in

in returning to its first temperature, it throws off again all that the additional heat had enabled it to dissolve: that independently of any increase or diminution of heat, a gradual evaporation of the fluid itself will occasion a proportional separation of the salt; and that the particles of the salt, in this separation from the water, unless too hastily forced together by sudden cooling or strong evaporation, or disturbed by external causes, generally congregate into transparent and regularly figured masses, called crystals. The several salts assume, in crystallization, figures peculiar to each: thus the crystals of nitre are hexagonal prisms; those of sea-salt, cubes; those of alum, octohedral masses; while sal ammoniac shoots into thin fibrous plates like feathers.

The use of preparing salts in a crystalline form is not merely in regard to their elegance, but as a mark of, and the means of securing, their purity and perfection. From substances not dissoluble in water, they are purified by the previous solution and filtration: by crystallization, one salt is purified from an admixture of such other saline bodies as dissolve either more easily or more difficultly than itself. For if two or more salts be dissolved together in a certain quantity of hot water, the salt, which requires the greatest heat for its solution in that quantity of water, will first begin to separate in cooling: and if the water is kept evaporating in an uniform heat, the salt which requires most water in that heat will be the first in crystallizing. In all cases of this kind, if the process is duly managed, the first shootings are generally well figured and pure: the succeeding ones, sooner or later, according to the quantity of the other salts in the liquor, retain an admixture of those

salts, which they betray by their smallness and by their figure.

In order to the crystallization of saline solutions, it is customary to boil down the liquor, till so much of the fluid has exhaled, as that the salt begins to congregate from it even while hot, forming a pellicle upon the surface exposed to the air; when this mark appears, the whole is removed into a cold place. This method seldom affords perfect crystals: for when water is thus saturated with the salt in a boiling heat, and then suddenly cooled; the particles of the salt run hastily and irregularly together, and form only a confused semitransparent mass. It is by slow concretion that most salts assume their crystalline form in perfection. The evaporation should be gentle, and continued no longer than till some drops of the liquor, in a heat below boiling, being let fall upon a cold glass plate, discover crystalline filaments: the liquor is then immediately to be removed from the fire into a less warm, but not a cold place; and the vessel covered with a cloth to prevent the access of cold air, and the formation of a pellicle, which, falling down through the fluid, would disturb the regularity of the crystallization. This is the most effectual method for most salts; though there are some, whose crystallization is to be effected, not by an abatement of the heat, but by a continued equable evaporation of the fluid; such in particular is sea-salt.

Salts retain in crystallization a portion of the aqueous fluid, without betraying any marks of it to the eye; on this their crystalline form appears in great measure to depend. The quantity of phlegm or water varies in different salts; dry crystals of nitre were found, on several careful trials, to contain about one twentieth

twentieth of their weight; those of alum, one sixth; sea-salt, one fourth; borax, green vitriol, and the purging salts, no less than one half. The same salt appears always to retain nearly the same quantity.

Some salts dissolve in spirit of wine; and here also, as in water, the solution is limited, though the salt is not easily recovered in a crystalline form. Such, in particular, are combinations of the nitrous acid with volatile alkalis, and with calcareous earths; of the marine acid with all the soluble earths; of the acetous with fixt and volatile alkalis. Scarce any of the compound salts, whose acid is the vitriolic, are affected by vinous spirits.

Salts differ greatly in their disposition to assume and retain a crystalline form. Many, even of the compound kind, imbibe humidity like fixt alkalis, so as to crystallize with difficulty; and when crystallized, or exsiccated by heat, to deliquesce again in the air. Such are the combinations of the nitrous and marine acid with all the soluble earths, and of the acetous both with earths and alkalis. The vitriolic acid, on the other hand, forms with all the substances it dissolves permanent crystals; as do likewise the other mineral acids with all alkalis.

The crystallization of those salts, which are not dissoluble in spirit of wine, is generally promoted by a small addition of that spirit; which absorbing the water, or weakening its dissolving power on the salt, disposes the salt to part from it more freely. The operator must be careful, however, not to add too much of the spirit, especially where the salt is composed of an earthy or metallic body united with the acid; lest it absorb the acid as well as the water, and, instead of a gradual and regular crystallization, hastily pre-

cipitate the earth or metal in a powdery form.

Mr Rouelle of the French academy of sciences, has examined with great attention the phenomena of the crystallization of salts, and published the result of his observations in different volumes of the *Memoirs* of that academy. Among other curious particulars, he has given a general distribution of salts, in regard to their crystallization, which will be of practical utility to the artist.

He divides evaporation into three degrees; *insensible evaporation*, or that effected by the natural warmth of the atmosphere, from freezing up to the heat of the summer's sun; *mean evaporation*, commencing with the sun's heat, and extending to that in which the exhaling steam is visible to the eye, and the liquor too hot to be endured by the hand; and *strong evaporation*, reaching from this period to boiling. He divides salts into six classes; the distinctions of which are taken from the degree of evaporation in which they crystallize most perfectly, from the figure of their crystals, their disposition to remain single or unite in clusters, and their receiving an increase from a continuance of the crystallization.

I. The first class consists of salts which crystallize into small plates or very thin scales. The crystals are single. They are, of all salts, those which crystallize most frequently on the surface of their solutions, which retain least water in their crystals, and require most to dissolve in. They crystallize most perfectly by insensible evaporation.

Sedative salt. Salicetes.

II. Salts

II. Salts whose crystals are cubes, cubes with the angles truncated, or pyramids of four or six sides. They form single, and change their figure by new accretions. By insensible evaporation they crystallize at the bottom, by mean evaporation at the surface, and by both kinds they prove perfect and regular: by strong evaporation, the liquor contracts a pellicle, and in cooling yields few crystals, and those ill figured.

Spiritus salis tartar.
Seasalt.
Vitriolated tartar.
marini coagulatus.

III. Salts whose crystals are tetrahedral, pyramidal, parallelopipeds, rhomboidal, and rhomboidal parallelopipeds; with the angles variously truncated according to different circumstances. They form single (except that some few unite by the bases) and change their figure by new accretions. They crystallize at the bottom, most perfectly by insensible evaporation: by mean and strong evaporation, the liquor contracts a pellicle, and in cooling the crystals adhere to the pellicle, and prove confused and ill formed. They retain a large quantity of water.

Green vitriol.
Seignett's salt.
Cubical nitre.
White vitriol.
Verdigris.
Blue vitriol.
Borax.
Alum.

IV. Salts whose crystals are flattened parallelopipeds, with the extremities terminating in two surfaces inclined to one another, so as to form a point and acute angles with the large sides. They cluster together, uniting, by the bases, into tufts. The crystals are largest and most regular by insensible evaporation: by mean and hasty evaporation, a pellicle is formed, and in cooling the crystals prove very small. They retain a large quantity of water in crystallization, and require little to dissolve in.

Tartar
soluble tartar.
Tartar united with volatile alkali.
united with adjacent carb.

V. Salts whose crystals are very long, in form of needles, prisms, or columns of different surfaces. They shoot at the bottom, and cluster together into tufts of regular figures. By insensible evaporation they scarce ever crystallize well. By mean and strong evaporation, they give a pellicle; and in slow cooling, if the evaporation was not carried too far, they yield perfectly well formed crystals, which at first swim, but soon fall to the bottom. If the evaporation was too long continued, the crystals prove confused and ill formed.

Sal ammon.
Philt. sal ammon.
Nitre.
Vol. nitre.
Glaub. salt.
Vol. vit. acid united with fixt alk.
of amber.
Vol. vit. acid united with fixt alk.

VI. Salts

VI. Salts whose crystals are in very small needles, or of other indeterminate figures. None of them crystallize by insensible evaporation, and few of them by the mean degree. They require to be reduced, by strong evaporation, to a thick consistence; they then contract a pellicle, and crystallize with confusion. If the crystals are wanted regular, spirit of wine must be used, or some other medium, if the salt is soluble in spirit. They readily dissolve in water, and liquefy in the air.

Marine acid united with absorbent earths.
Nitrous acid united with absorbent earths.
Sal diureticus.

NITRUM PURIFICATUM.

Purified nitre.

Lond.

Boil nitre in water till it is dissolved; filtre the solution through paper; and then, after due evaporation, set it by in a cold place, that the nitre may shoot into crystals.

Edinb. +

The liquor which remains after the crystallization, may be further evaporated, and set to shoot as before; but this process must not be too long protracted.

COMMON nitre contains usually a considerable proportion of sea-salt, which in this process is separated, the sea-salt remaining dissolved after greatest part of the nitre has crystallized. The crystals which shoot after the first evaporation, are large, regular, and pure: but when the remaining liquor is further evaporated, and this repeated a second or third time, the crystals prove at length small, imperfect, and tipped with little cubical glebes of sea salt.

When rough nitre, in the state wherein it is first extracted from the

earths impregnated with it (see page 187.) is treated in this manner, there remains at last a liquor, called mother-ley, which will no longer afford any crystals. This appears to participate of the nitrous and marine acids, and to contain an earthy matter dissolved by those acids. On adding alkaline lixivium, the earth is precipitated; and when thoroughly washed with water, proves insipid. If the liquor be evaporated to dryness, a bitterish saline matter is left; which being strongly calcined in a crucible, parts with the acids, and becomes, as in the other case, insipid.

This earth has been celebrated as an excellent purgative, in the dose of a dram or two; and, in smaller doses, as an alterant in hypochondriacal and other disorders. This medicine was for some time kept a great secret, under the names of *Magnesia alba*, *Nitrous panacea*, *Count Palma's powder*, *Il polvere albo Romano*, *Poudre de Sentinelli*, &c. till Lancisi made it public in his notes on the *Metallototeca Vaticana*. It has been supposed, that this earth is no other than a portion of the lime commonly added in the elixation of nitre at the European nitre-works: but though the specimens of magnesia examined by Neumann, and some of that which has lately been brought hither from abroad, gave plain marks of a calcareous nature; yet the true magnesia must be an earth of a different kind, calcareous earths being rather astringent than purgative. The earthy basis of the *sal catharticus amarus* is found to have the properties ascribed to the true magnesia of nitre, and appears to be the very same species of earth: from that salt therefore this medicine is now prepared, as will be seen hereafter. The magnesia alba differs from calcareous earths, in ha-

H h ving

ving a less powerful attraction for fixed air, and in not becoming caustic by calcination.

SAL AMMONIACUS PURIFICATUS.

Purified sal ammoniac.

Lond.

This salt is purified by solution in water, filtration, and crystallization, after the manner above directed for nitre.

Edinb. +

The liquor remaining after the crystallization is to be further evaporated, and the crystallization repeated, so long as any salt will shoot from it.

THE impurities of sal ammoniac are commonly such as will not dissolve in water; and hence the purification is effected by the solution and filtration. The very last crystals seldom betray an admixture of any other salt.

FLOS SALIS AMMONIACI.

Flowers of sal ammoniac.

Edinb. +

Take any convenient quantity of dry sal ammoniac in powder: put it into an earthen cucurbit; and having fitted on a blind-head, sublime the salt with a fire gradually increased.

THIS process seems to be intended with a view to the further purification of the salt. As sal ammoniac, however, carries up with it substances which of themselves are not volatile; as it is originally prepared by a similar process, and may possibly suffer some alteration in its quality from repetitions of it; the sublimation does not appear to be either needful or expedient. Neumann observes, that by repeated sublimations, it acquires at length a

yellowish tinge, and a particular smell, of which it discovered nothing at first, and which he attributes to the extrication of the oily or inflammable matter of its volatile animal salt; for that sal ammoniac participates of an inflammable principle, appears from its deflagration with nitre.

VITRIOLUM PURIFICATUM, vulgo GILLA VITRIOLI.

Purified white vitriol, commonly called Gilla of vitriol.

Edinb. +

Dissolve white vitriol in a sufficient quantity of warm water, filtre the solution, and evaporate it to the consumption of two-thirds: set the remainder in a cold place, that the salt may shoot into crystals upon the sides of the vessel, and afterwards dry the crystals in the sun. The remaining liquor is to be further evaporated, and set to crystallize as before; and this process repeated till no more salt will shoot.

SOLUTIONS of white vitriol deposite, on standing, a yellow ochery substance; which, if not suffered to separate before the liquor is exhaled and set to shoot, will foul the crystals. Willson directs the vitriol to be dissolved in just as much water as will keep it from crystallizing, viz. two pounds, or two pounds and a half of water to one of the vitriol; and the filtered solution kept warm, to settle, for twenty-four hours: being then evaporated to a proper pitch for crystallization, a yellow matter is still frequently found at the bottom, from which the liquor must be decanted before it is set by to shoot. It may be observed, that the separation is by far the most plentiful and speedy while the liquor boils: solutions, which had stood

flood in the cold for some days, and appeared perfectly clear, on being made to boil, became immediately turbid, and threw off a yellow ochre.

SAL VITRIOLI.

Salt of vitriol.
Lond.

Take of

White vitriol, one pound;
Strong spirit (called oil) of vitriol,
one ounce by weight;
Water, as much as is sufficient.

Boil them together till the vitriol is dissolved; then filtre the liquor, and after due evaporation set it by in a cold place to crystallize.

HERE the intention is not to separate the ochery matter of the vitriol, but to prevent its separating and colouring the crystals. This is effectually answered by the addition of the acid, by which it is kept dissolved.

ALUMEN USTUM.

Burnt alum.
Lond. and Edinb.

Let alum be calcined in an iron or earthen vessel, so long as it bubbles and swells up.

THE bubbling or blistering proceeds from the phlegm retained in the crystals; after that is expelled, the salt cannot be made liquid by any degree of fire. Alum is composed of vitriolic acid and an earth: and it is remarkable, that combinations of that acid with all earths, with most metals, and even with vegetable fixt alkalis, are unfusible.

The alum thus deprived of its phlegm, proves considerably stronger, and more acrid, insomuch as to be sometimes employed for consuming fungous flesh: it is said to have an inconvenience of leaving a hardness upon the part.

VITRIOLUM CALCINATUM.

Calcined vitriol.
Lond.

Let green vitriol be calcined in an earthen vessel, with an open fire, till it becomes thoroughly dry: then breaking the vessel, take out the vitriol, and set it by for use, well closed from the air. The vitriol is sufficiently calcined, if it has acquired a red colour at the sides and bottom of the vessel.

THIS process succeeds tolerably well for small quantities, but does not answer so perfectly for larger. As the action of the fire is exerted first on the external parts of the mass, these will be calcined first, and, where the quantity is large, exhibit the mark of sufficient calcination, whilst the internal part remains almost unchanged: and even if the process is still farther continued, the effect required will not be produced; for the outside growing first hard, prevents the evaporation of the aqueous parts from within.

Edinb.

Expose any quantity of green vitriol, in an unglazed earthen vessel, to the action of a moderate fire, till it becomes white and thoroughly dry; keeping the matter continually stirring, to prevent its sticking to the vessel, and acquiring a stony hardness.

COLCOTHAR VITRIOLI.

Colcothar of vitriol.
Edinb.

‘Let the vitriolum calcinatum be urged with a vehement heat, till it passes into a deep red substance.’

THIS method is sufficiently troublesome: for unless the heat be very gentle,

gentle, and the matter spread very thin over the bottom of a broad shallow vessel, it is almost impossible to avoid melting it, which makes it adhere to the sides of the pan, and renders the previous pulverisation an useless labour.

The method usually practised by the chemists is, to place a deep earthen pan, with some vitriol in it, upon a gentle fire; the vitriol soon liquefies, boils up, and by degrees incrustates to the sides of the vessel: some more vitriol is then thrown in and suffered to incrustate in the same manner, and this procedure repeated till the pan is nearly full of the concreted matter, which proves of a whitish colour, except on the outside next the pan (which must be broken to take it out), where it appears yellowish or reddish, according to the continuance and degree of fire. If the vitriol be desired to be still farther deplegmatized, this may be commodiously effected, by reducing the mass into a gross powder (which will now no longer melt), and then calcining it over a strong fire, in a shallow iron pan, till it has gained the degree of dryness required, which may be known from its colour.—The principal use of calcined vitriol is for the distillation of the spirit of vitriol: if employed for this purpose uncalcined, it would melt in the distilling vessel, and running into a lump, scarce give out any spirit; and the little obtained would be very weak. ‘The chief use of the colcothar is as a colouring matter in plasters.’

TARTARUM VITRIOLATUM.

Vitriolated tartar.

Lond.

Dissolve eight ounces of green vitriol in four pints of boiling water; and whilst the liquor conti-

nues boiling, throw it into salt of tartar, or any other alkaline salt, till no farther effervescence arises upon a fresh addition; which generally happens when four ounces, or a little more, of the salt have been used. Filtre the liquor through paper, and after due evaporation set it by to crystallize.

HERE the acid of the vitriol forsakes the iron which it was before in possession of, to unite with the alkaline salt: particular care ought to be had that the quantity of alkali be sufficient to fully saturate the acid, otherwise it will not deposit all the metal. It is convenient, even after the saturation seems, from the effervescence ceasing, to be completed, to throw in a little more of the alkali; for by this means the preparation is secured from containing any metallic matter; whilst the superfluous quantity of alkali can do no prejudice, as it remains uncrystallized.

It is remarkable, that although the vitriolic acid and fixt alkaline salt do each readily unite with water, and strongly attract moisture even from the air; yet the neutral salt resulting from the combination of these two, vitriolated tartar, is one of the salts most difficult of solution, very little of it being taken up by cold water. Hence some have directed the liquor in this process to be filtered whilst very hot, suspecting, that if it was suffered to cool, great part of the salt would be thrown off and left upon the paper. The college, however, has avoided this inconvenience, by ordering a quantity of water which is found to be sufficient for keeping the salt dissolved in the cold, or at least in a moderate warmth.

ALKALI FIXUM VEGETA-
BILE VITRIOLATUM,
vulgo TARTARUM
VITRIOLATUM.

Vitriolated fixed vegetable alkali,
commonly called *Vitriolated tartar.*
Edinb.

Take of

Vitriolic acid, diluted with six
times its quantity of water, as
much as you please.

Put it into a capacious glass vessel,
and gradually drop into it, of pu-
rified fixed vegetable alkali, di-
luted with six times its weight of
water, as much as is sufficient
thoroughly to neutralize the a-
cid. The effervescence being fi-
nished, strain the liquor through
paper; and after proper evapora-
tion, set it apart to crystallize.

THE operator ought to take
care that the vapour, separated du-
ring the effervescence shall not be
applied to his nostrils; as fixed air,
when applied to the olfactory nerves,
is highly deleterious to life.

This is an elegant, and one of the
least troublesome ways of preparing
this salt. The Edinburgh College,
in their former editions, ordered the
acid liquor to be dropt into the al-
kaline: by the converse procedure,
now received, it is obviously more
easy to secure against a redundance of
acidity; and for the greater certainty
in this point, it may be expedient,
as in the foregoing process, to drop
in a little more of the alkaline ley
than the cessation of the effervescence
seems to require.

In a former edition of the same
Pharmacopœia, the acid was direc-
ted to be diluted only with equal its
quantity of water, and the alkali
with that quantity of water which
it is capable of imbibing from the
atmosphere. (See OLEUM TARTARI
per DELIQUIUM.) By that imper-

fection there was not near enough
of water to keep vitriolated tartar
dissolved; on which account, as fast
as the alkali was neutralized by the
acid, a great part fell to the bottom
in a powdery form. In order to
obtain perfect and well formed cry-
stals, the liquor should not be set in
the cold, but continued in the mo-
derate heat, such as the hand can
scarcely bear, that the water may
slowly evaporate.

Vitriolated tartar, in small doses,
as a scruple or half a dram, is an
useful aperient; in larger ones, as
four or five drams, a mild cathartic,
which does not pass off so hastily as
the *sal catharticus amarus*, or *sal*
Glauberi, and seems to extend its ac-
tion further. The wholesale deal-
ers in medicines have commonly sub-
stituted to it an article otherwise al-
most useless in their shops, the re-
siduum of Glauber's spirit of nitre.
This may be looked upon as a venial
fraud, if the spirit has been prepa-
red as formerly directed, and the
residuum dissolved and crystallized:
but it is a very dangerous one if the
vitriolic acid has been used in an
over proportion, and the caput mor-
tuum employed without crystalliza-
tion; the salt in this case, instead
of a mild neutral one, of a mode-
rately bitter taste, proving highly
acid. The purchaser ought there-
fore to insist upon the salt being in
a crystalline form. The crystals,
when perfect, are oblong, with six
flat sides, and terminated at each
end by a six-sided pyramid: some
appear composed of two pyramids
joined together by the bases; and
many, in the most perfect crystalli-
zations I have seen, are very irre-
gular. They decrepitate in the fire,
somewhat like thole of sea-salt, for
which they have sometimes been mis-
taken.

NITRUM VITRIOLATUM.*Vitriolated nitre.**Lond.*

Dissolve in warm water the mass which remains after the distillation of Glauber's spirit of nitre: filtre the solution through paper, and crystallize the salt.

THIS salt is not different from the *tartarum vitriolatum*, being composed of the vitriolic acid, and the alkaline basis of nitre; which alkali is no other than the common vegetable fixt alkaline salt, as salt of tartar or potash: it is, in effect, from the ashes of vegetables, that the nitre prepared in Europe receives its alkaline basis. If any unchanged nitre remains in the mass, it is left dissolved in the water while the vitriolated alkali crystallizes.

SAL POLYCHRESTUM.*Salt of many virtues.**Edinb.*

Take

Nitric in powder,

Flowers of sulphur, of each equal parts.

Mingle them well together, and inject the mixture, by little and little at a time, into a red-hot crucible: 'the deflagration being over, let the salt cool; after which it is to be put up in a glass vessel well shut.' The salt may be purified by dissolving it in warm water, filtering the solution, and exhaling it to dryness; or by crystallization.

THIS is another method of uniting the vitriolic acid with the common vegetable fixt alkali. Both the nitre and the sulphur are decomposed in the operation: the acid of the nitre, and the inflammable principle of the sulphur, detonate together, and are dissipated; while the acid of the sulphur (which, as we have

already seen, is no other than the vitriolic acid) remains combined with the alkaline basis of the nitre. The shops, accordingly, have substituted to the sal polychrest the foregoing preparation.

SAL PRUNELLÆ.*Edinb. +*

Take of

Pure nitre reduced to powder, two pounds;

Flowers of sulphur, one ounce.

Melt the nitre in a crucible, and sprinkle into it the sulphur by little at a time. When the deflagration is over, pour out the melted salt upon a clean, dry, and warm brass plate, so as to form it into cakes.

THOSE who prepare sal prunellæ in large quantities, make use of a clean iron pot instead of a crucible; and when the nitre is melted, and the sulphur deflagrated, take out the salt with an iron ladle, and pour it into brass moulds kept for this purpose. The previous pounding of the nitre, directed above, may be as well omitted, as occasioning a needless trouble.

This preparation was formerly in great esteem, and is sometimes still ordered in prescription. It is nevertheless built upon an erroneous foundation, which supposed, that the nitre was purified by the deflagration it undergoes upon injecting a little sulphur on it: from proper experiments it appears, that the sulphur is so far from depurating the nitre, or tending to its improvement as a medicine, that it really alters some part of it into a salt, which has quite different properties. The real effect of this process will be easily understood from the preceding one: there, nearly all the nitre is decomposed, and a salt, differing only from vitriolated tartar, in

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containing less water,' is found in its place: here, only about one twenty-fourth part of it suffers this change. Boerhaave, instead of de-flagrating the nitre with sulphur, orders it to be only well purified after the common method, and then melted by itself and poured into moulds: the fusion here serves to bring the salt into a less compass, by evaporating the aqueous moisture which had concentered with it in its crystallization; though even in this intention it is not of much use, the quantity of water which nitre retains not being very considerable.

SAL CATHARTICUS GLAUBERI.

*The cathartic salt of Glauber, commonly called Sal mirabile.
Lond.*

SODA VITRIOLATA, vulgo SAL CATHARTICUS GLAUBERI.

*Vitriolated soda, commonly called
Cathartic salt of Glauber.
Edinb.*

Dissolve in warm water the mass which remains after the distillation of spirit of sea-salt: filtre the solution, and crystallize the salt.

'In a former edition of the Edinburgh Pharmacopœia, it was ordered, that if the crystals (obtained as above) proved too sharp, they should be again dissolved in water; and the filtered liquor evaporated to such a pitch only as may dispose the salt to crystallize.' But there is no great danger of the crystals proving too sharp, even when the spirit of salt is made with the largest proportion of oil of vitriol directed under that process. The liquor which remains after the crystallization is indeed very acid; and with regard to this preparation, it is convenient it

should be so; for otherwise the crystals will be very small, and likewise in a little quantity. Where a sufficient proportion of oil of vitriol has not been employed in the distillation of the spirit, it is necessary to add some to the liquor, in order to promote the crystallization of the salt.

The title of this salt expresses its medical virtues. Taken from half an ounce to an ounce, or more, it proves a mild and useful purgative; and in smaller doses, largely diluted, a serviceable aperient and diuretic. The shops frequently substitute to it the *sal catharticus amarus* (see page 222), which is nearly of the same quality, but somewhat more unpleasant, and, as is said, less mild in operation. They are very easily distinguishable from each other, by the effect of alkaline salts upon solutions of them. The solution of Glauber's salt suffers no visible change from this addition, its own basis being a true fixt alkali: but the solution of the *sal catharticus amarus* grows instantly white and turbid, its basis, which is an earth, being extricated copiously by the alkaline salt; as in the following process.

MAGNESIA ALBA.

*White magnesia.
Edinb.*

'Take of
Bitter purging salt,
Purified fixed vegetable alkali,
equal weights.

Dissolve them separately in double their quantity of warm water, and let the liquor be strained or otherwise freed of the feces; then mix them, and instantly add eight times their quantity of warm water. Let the liquor boil for a little on the fire, stirring it at the same time; then let it rest till the heat is somewhat diminished;

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after which strain it through a cloth: the magnesia will remain upon the cloth, and it is to be washed with pure water till it is altogether void of saline taste.

‘THE *sal catharticus amarus*, or *Epsom salt*, is a combination of the vitriolic acid and magnesia. In this process, then, a double elective attraction takes place: the vitriolic acid forsakes the magnesia and joins to the mild alkali, with which it has a greater attraction; whilst the magnesia in its turn unites with the fixed air, discharged from the mild alkali, and ready to be absorbed by any substance with which it can combine.

‘We have therefore two new products, viz. a vitriolated tartar, and magnesia united with fixed air. The former is dissolved in the water, and may be preserved for use; the latter, as being much less soluble, sinks to the bottom of the vessel. The intention of employing such a large quantity of water and of the boiling is, that the vitriolated tartar shall be all thoroughly dissolved, this salt being so scantily soluble in water, that without this expedient a part of it might be precipitated along with the magnesia. It might perhaps be more convenient to employ the mineral alkali, which forming a Glauber’s salt with the vitriolic acid, would require less water for its suspension. By the after ablutions, however, the magnesia is sufficiently freed of any portion of vitriolated tartar which may have adhered to it.

‘The ablutions should be made with very pure water; for nicer purposes distilled water may be used with advantage; and soft water is in every case necessary. Hard water for this process is peculiarly inadmissible, as the principle in waters giving the property called *hard-*

ness, is generally owing to an imperfect nitrous selenite, whose base is capable of being disengaged by magnesia united with fixed air. For though the attraction of magnesia itself to the nitrous acid, is not greater than that of calcareous earths; yet when combined with fixed air, a peculiar circumstance intervenes, whereon it is deducible, that the sum of the forces tending to join the calcareous earth with the air of the magnesia, and the magnesia with the acid, is greater than the sum of the forces tending to join the calcareous earth with the acid, and the magnesia with the fixed air.

‘This phenomenon must therefore depend on the presence of fixed air, and its greater attraction for lime than for magnesia. On this account, if hard water is used, a quantity of calcareous earth must infallibly be deposited on the magnesia; whilst the nitrous acid with which it was combined in the water, shall in its turn attach itself to a portion of the magnesia, forming what may be called a *nitrous magnesia*.

‘All the alkalis, as also calcareous earths, have a greater attraction for fixed air than magnesia has; Hence, if this last is precipitated from its solution in acids by caustic alkalis, it is then procured free of fixed air; but for this purpose calcination is more generally employed (See *MAGNESIA USTA*.) Magnesia is scarcely soluble in any quantity whatever in water: the infinitely small portion which this fluid is capable of taking up, is owing to the fixed air of the magnesia; and it has been lately discovered, that water impregnated with this acid (see *AQUA MEFHITICA*) is capable of dissolving a considerable portion: for this purpose it is necessary to employ magnesia already saturated with fixed air, as magnesia deprived of this air would quickly abstract it from

from the water, whereby the force of the latter would be very considerably diminished. Such a solution of magnesia might be useful for several purposes in medicine.

MAGNESIA is the same species of earth with that obtained from the mother-ley of nitre (see page 481.), which was for several years a celebrated secret in the hands of some particular persons abroad. Hoffman, who describes the preparation of the nitrous magnesia, gives it the character of an useful antacid, a safe and inoffensive laxative in doses of a dram or two, and a diaphoretic and diuretic when given in smaller doses of fifteen or twenty grains. Since his time, it has had a considerable place in the practice of foreign physicians; and is now in great esteem among us, particularly in heartburns, and for preventing or removing the many disorders which children are so frequently thrown into from a redundance of acid humours in the first passages: It is preferred, on account of its laxative quality, to the common absorbents, which (unless gentle purgatives are given occasionally to carry them off) are apt to lodge in the body, and occasion a costiveness very detrimental to infants.

Magnesia alba, when prepared in perfection, is a white and very subtle earth, perfectly void of smell or taste, of the class of those which dissolve in acids. It dissolves freely even in the vitriolic acid; which, in the common way of making solutions, takes up only an inconsiderable portion of other earths. Combined with this acid, it forms the bitter purging, or Epsom salt, very easily soluble in water; while the common absorbents form with the same acid almost insipid concretes, very difficult of solution. Solutions of magnesia in all acids are

bitter and purgative; while those of the other earths are more or less austere and astringent. A large dose of magnesia, if the stomach contains no acid to dissolve it, does not purge or produce any sensible effect; a moderate one, if an acid is lodged there, or if acid liquors are taken after it, procures several stools; whereas the common absorbents, in the same circumstances, instead of loosening, bind the belly. It is obvious, therefore, that magnesia is specifically different from the other earths, and that it is applicable to useful purposes in medicine.

Magnesia was formerly made with the mother-water of nitre evaporated to dryness, or precipitated by a fixed alkali. It has gone under different names, as the *White powder of the Count of Palma*, *Powder of Sentinelle*, *Polychrest*, *Laxative powder*, &c. It seems to have got the character *alba*, to distinguish it from the dark-coloured mineral called also *magnesia*, or *manganese*; a substance possessing very different properties. We have not heard that pure native magnesia has been found in its uncombined state: A combination of it with sulphur has been discovered to cover a stratum of coal at Littry in Lower Normandy. It has also been found in certain serpentine earths in Saxony, and in marly and alum earths.

MAGNESIA USTA.

Calcined magnesia.

Edinb.

‘ Let magnesia, placed in a crucible, be continued in a red heat for two hours; then put it up in close glass vessels.

‘ By this process the magnesia is freed of fixed air; which, by Dr Black’s experiments, makes about $\frac{1}{4}$ of its weight. A kind of opaque foggy

foggy vapour is observed to escape during the calcination, which is nothing else than a quantity of fine particles of magnesia buoyed off along with a stream of the disengaged air. About the end of the operation, the magnesia exhibits a kind of luminous, or phosphorescent property; and this may be considered as a pretty exact criterion of its being deprived of air.

Calcined magnesia is equally mild as when saturated with fixed air; and this circumstance is sufficient to establish a difference betwixt it and calcareous earths; all of which are converted, by calcination, into a caustic quicklime.

The magnesia usta is used for the same general purposes as the magnesia combined with fixed air. In certain affections of the stomach, accompanied with much flatulence, the calcined magnesia is found preferable, not only as containing more of the real earth of magnesia in a given quantity, but as being also deprived of its air, it neutralizes the acid of the stomach, without that extrication of air which is often a troublesome consequence in employing the aerated magnesia in these complaints. It is proper to observe, that magnesia, whether combined with, or deprived of fixt air, is similar to the mild calcareous earths in promoting and increasing putrefaction. The same has even been observed with respect to the Epsom and some other salts with base of this earth.

NITRUM CUBICUM.

Cubical nitre.

Dissolve chalk or lime in purified aquafortis, and add the solution by degrees to a solution of Glauber's salt in water, so long as a fresh addition produces any milkiness: a white powder will precipitate; after which the liquor is to be

filtered, and, after due evaporation, set to crystallise.

In this process, both the solutions are decomposed, and two new compounds produced. The vitriolic acid of the Glauber's salt unites with the chalk, and forms with it an indissoluble selenitic concrete, which of course precipitates; while the alkali of the Glauber's salt and the nitrous acid unite into a neutral salt, which is separated from the liquor by crystallisation. The crystals are rhomboidal, of a cooling taste, greatly resembling that of common nitre. How far this salt differs from common nitre in its medical virtue, is not known. The process is here inserted, partly, as being a very instructive one in regard to the transpositions which happen on the mixture of different saline bodies; and partly as affording the most convenient means of obtaining the pure alkaline basis of sea-salt. In the distillation of spirit of salt, that basis was disunited from its own acid, and combined with the vitriolic: it is here transferred from the vitriolic to the nitrous; and in page 440, we have given a method of dissipating or destroying the nitrous acid, and leaving the alkali that was combined with it pure.

SPIRITUS SALIS MARINI COAGULATUS.

Spirit of sea-salt coagulated.

Lond.

Drop into Glauber's spirit of sea-salt, a ley of any fixt alkaline salt, till all effervescence ceases; then evaporate the mixture to dryness.

THIS preparation is inserted, under the same title, in the Wirtemberg Pharmacopœia. It has been commonly called *regenerated sea-*

sea-salt, though with little propriety, as it differs from that salt in its basis; the common vegetable alkali being here substituted to the mineral alkali of *sea-salt*. How far it differs from *sea-salt*, in its medical qualities, I cannot take upon me to determine; it is manifestly sharper in taste, and somewhat more difficult both of solution in water, and of fusion in the fire.

It is however obvious, that the words *any fixt alkaline salt*, are very indefinite and improper; as it is now well known, that the vegetable and mineral fixt alkalis differ widely in their several combinations with the acids.

If the common alkalis are made use of for this process, they should be previously purified, by solution and crystallisation, from the neutral salt which they generally contain. The distilled vinegar must be perfectly free from any empyreumatic taint: It is not necessary to dephlegmate it, or throw away the first runnings in the distillation, since these contain a portion of the acid (the part here wanted) as well as the phlegm.

It is difficult to hit the point of saturation betwixt the acetous acid and the alkaline salt. After about fourteen parts of strong distilled vinegar have been gradually poured upon one of the fixed salt, the addition of a little more of the acid will not occasion any further effervescence in the cold: But if the mixture be now strongly stirred and well heated, the effervescence will appear afresh; upon which some more vinegar is to be added till it again ceases. The saturation is not as yet complete; for upon exhaling the aqueous parts, the remaining salt still effervesces with fresh vinegar. When so much of the acid has now been added, that no marks of fermentation any longer appear, a little more of the vinegar may be

poured in before you proceed to the last evaporation; by this means the saturation of the alkali will be secured, whilst, if the acid prevails, the superfluous quantity of it will exhale.

The salt thus prepared is of a dark brown colour, a peculiar, not ungrateful odour, a penetrating saponaceous, saline taste, in no wise alkaline or acid. Its brown colour and saponaceous quality proceed from the oily parts of the vinegar; the depuration of the salt from this oil is not in the foregoing process insisted on. In the London Pharmacopœia, the salt is ordered to be purified to perfect whiteness, under the title of

SAL DIURETICUS.

Diuretic salt.

Lond.

Take a pound of any fixt alkaline salt, and boil it with a very gentle heat in four or five times its weight of distilled vinegar. When the fermentation ceases, add more distilled vinegar; and proceed with fresh additions thereof, until the vinegar being almost evaporated, fresh vinegar will no longer raise any fermentation; which generally happens by the time that twenty pounds of distilled vinegar have been used. Then slowly exhale to dryness.

Melt the remaining impure salt for a little time, but not too long, over a gentle fire; then dissolve it in water, and filtre the solution through paper. If the melting has been duly performed, the filtered liquor will be limpid and colourless as water; but if otherwise, of a brown colour.

Evaporate the limpid solution, with an exceeding gentle heat, in a shallow glass vessel; occasionally stirring the salt as it dries, that
its

its moisture may be the sooner exhaled. Afterwards keep it for use in a vessel very closely stopt; for it will liquefy by the air.

This salt ought to be of perfect whiteness; and should totally dissolve both in water and in spirit of wine, without leaving any feces. If the salt, though ever so white, deposits any feces in spirit of wine, the whole of it must be dissolved in that spirit, the solution filtered, and exsiccated again.

The subsequent process scarcely differs from the above,

• ALCALI FIXUM VEGETABILE ACETATUM, vulgo TARTARUM REGENERATUM.

Acetated fixed vegetable alkali, commonly called Regenerated tartar. Edinb.

• Take of

Salt of tartar, one pound.

Boil it with a very gentle heat in four or five times its quantity of distilled vinegar; add more distilled vinegar, at different times, till such time as, on the watery part of the former quantity being nearly dissipated by evaporation, the new addition of vinegar ceases to raise any effervescence. This happens, when about twenty pounds, by weight, of distilled vinegar has been consumed. The impure salt remaining after the exsiccation, is to be liquefied with a gentle heat for a short time, and it is proper that it should only be for a short time; then dissolve it in water, and strain through paper. If the liquefaction has been properly performed, the strained liquor will be limpid; but if otherwise, of a brown colour.

Evaporate this liquor with a very gentle heat in a shallow glass ves-

sel, occasionally stirring the salt as it becomes dry, that its moisture may sooner be dissipated. Then put it up into a vessel very closely stopt, to prevent it from liquefying in the air.

THE purification of this salt is not a little troublesome. The operator must be particularly careful in melting it, not to use too great a heat, or to keep it liquefied too long; a little should be occasionally taken out, and put into water; and as soon as it begins to part freely with its black colour, the whole is to be removed from the fire. In the last drying, the heat must not be so great as to melt it; otherwise it will not prove totally soluble. If the solution in spirit of wine be exsiccated, and the remaining salt liquefied with a very soft fire, it gains the leafy appearance, which has procured it the name *Terra foliata*.

In the fourth volume of the Memoirs of the correspondents of the French Academy, lately published, Mr Cadet has given a method of making the salt white at the first evaporation, without the trouble of any further purification. He observes, that the brown colour depends upon the oily matter of the vinegar being burnt by the heat commonly employed in the evaporation; and his improvement consists in diminishing the heat at the time that this burning is liable to happen. The process he recommends is as follows.

Dissolve a pound of salt of tartar in a sufficient quantity of cold water; filtre the solution, and add by degrees as much distilled vinegar as will saturate it, or a little more. Set the liquor to evaporate in a stone-ware vessel in a gentle heat, not so strong as to make it boil. When a pellicle ap-

pears

appears on the surface, the rest of the process must be finished in a water-bath. The liquor acquires by degrees an oily consistence, and a pretty deep brown colour; but the pellicle or scum on the top looks whitish, and when taken off and cooled, appears a congeries of little brilliant silver-like plates. The matter is to be kept continually stirring, till it is wholly changed into this white flaky matter; the complete drying of which is most conveniently effected in a warm oven.

We shall not take upon us to determine whether the pure or impure salt is preferable as medicines; observing only, that the latter is more of a saponaceous nature, the former more acrid, though somewhat more agreeable to the stomach. Mr Cadet reckons the salt prepared in his method superior both to the brown and white sorts made in the common way, as possessing both the oily quality of the one, and the agreeableness of the other, and as being always uniform or of the same power; whereas the others are liable to vary considerably, according to the degree of heat employed in the evaporation. They are all medicines of great efficacy, and may be so dosed and managed, as to prove either mildly cathartic, or powerfully diuretic: few of the saline deobstruents come up to them in virtue. The dose is from half a scruple to a dram or two. A bare mixture of alkaline salt and vinegar, with-

out exsiccation, is not perhaps much inferior as a medicine to the more elaborate salt. I have known two drams of the alkali, saturated with vinegar, occasion ten or twelve stools in hydropic cases, and a plentiful discharge of urine, without any inconvenience.

SPIRITUS MINDERERI.

Spirit of Mindererus.

Edinb.

Take any quantity of the volatile alkaline salt of sal ammoniac, and gradually pour upon it distilled vinegar till the effervescence ceases; occasionally stirring the mixture to promote the action of the vinegar on the salt.

THIS is an excellent aperient saline liquor. Taken warm in bed, it proves commonly a powerful diaphoretic or sudorific; and as it operates without heat, it has place in febrile and inflammatory disorders, where medicines of the warm kind, if they fail of procuring sweat, aggravate the distemper. Its action may likewise be determined to the kidneys, by walking about in a cool air. The common dose is half an ounce, either by itself, or along with other medicines adapted to the intention. Its strength is not a little precarious, depending in great measure on that of the vinegar; an inconvenience which cannot easily be obviated, for the saline matter is not reducible to the form of a concrete salt.

SECT.

S E C T. VII.

ANOMALOUS SALTS

CRYSTALLI TARTARI.

*Crystals of tartar.**Edinb. +*

LET powdered white tartar be boiled in twenty times its quantity of water till perfectly dissolved; and the solution, whilst it continues hot, passed through filtering paper or a woollen cloth, and received in a wooden vessel; then expose it for a night or longer to the cold air, that crystals may form themselves, and shoot to the sides of the vessel; the water being now poured off, the crystals are to be collected and dried for use.

THE filtration of the solution of tartar through paper succeeds very slowly, and unless managed with a good deal of address, not at all: for as soon the boiling liquor begins to grow sensibly less hot, it deposits much of the tartar all over the surface of the paper, which hinders the remainder from passing through. Zwelfer, in his animadversions on this process in the Augustan pharmacopœia, directs the solution to be clarified with whites of eggs, and strained only through a linen cloth: he likewise judiciously orders the vessel to be close covered, and the crystallization performed in a warm place: for if the solution be suffered to cool very fast, it is in vain to expect any appearance of crystals; the tartar will inevitably be precipitated to the bottom of the vessel in the form of sand. And, indeed, the business of refining and crystallizing tartar is so very troublesome, and requires so large an apparatus,

that scarce any of the apothecaries, or even of the trading chemists, are at the trouble of it; but either import it ready refined from Holland, or purchase it from some people here who make it their sole business. See the article TARTAR.

CREMOR TARTARI.

*Cream of tartar.**Edinb. +*

Take any quantity of solution of tartar, made as in the foregoing process, and passed through a filtre. Boil it over the fire till a thick cuticle appears on the surface, which is to be taken off with a wooden skimmer bored full of holes: continue the boiling till a fresh cuticle arises, which is to be taken off as the foregoing, and the operation repeated till the whole quantity of liquor is thus consumed. Afterwards dry all the cuticles together in the sun.

THIS process seems inserted only to retain a name long familiar to the shops; for the preparation itself in no respect differs from crystals of tartar reduced to powder. Indeed the purchaser ought always to prefer the crystals; for the powder is often sophisticated with saline substances of another kind.

The College of Edinburgh, 'in a former edition, observed,' that both the crystals and cream are brought to us from abroad; that they are not different in quality from one another; and that good white tartar, unrefined, is not inferior to either of them.

TAR-

TARTARUM SOLUBILE.*Soluble tartar.**Lond.*

Dissolve a pound of any fixt alkaline salt in a gallon of boiling water; and gradually throw in crystals of tartar, as long as a fresh addition thereof raises any effervescence; which generally ceases before three pounds of the crystals have been used; then filtre the liquor, and after due evaporation, set it by to crystallize; or evaporate it to dryness, and keep the remaining saline mass for use.

ALCALI FIXUM VEGETABILE TARTARISATUM,vulgo **TARTARUM****SOLUBILE.**

Tartarised vegetable fixed alkali, commonly called Soluble tartar.

Edinb.

Take of

Purified fixt vegetable alkaline salt, one pound;

Water, fifteen pounds.

To the salt dissolved in the boiling water gradually add crystals of tartar in fine powder, as long as the addition thereof raises any effervescence, which almost ceases before three times the weight of the alkaline salt hath been injected; then strain the cooled liquor through paper, and after due evaporation set it by to crystallize.

COMMON white tartar is perhaps preferable for this operation to the crystals usually met with, (see the article TARTAR, page 246.) Its impurities can here be no objection; since it will be sufficiently depurated by the subsequent filtration.

The preparation of this medicine by either of the above methods is very easy; though some chemists have rendered it sufficiently troublesome by a nicety that is not at all

wanted. They insist upon hitting the very exact point of saturation betwixt the alkaline salt and the acid of the tartar; and caution the operator to be extremely careful, when he comes near this mark, lest by imprudently adding too large a portion of either, he render the salt too acid or too alkaline. If the liquor be suffered to cool a little before it is committed to the filtre, and then properly exhaled and crystallised, no error of this kind can happen, though the saturation should not be very exactly hit: for since crystals of tartar are very difficultly soluble even in boiling water, and when dissolved therein concrete again upon the liquor's growing cold; if any more of them has been employed than is taken up by the alkali, this superfluous quantity will be left upon the filtre; and on the other hand, if too much of the alkali has been made use of, it will remain uncrystallised. The crystallisation of this salt indeed cannot be effected without a good deal of trouble: it is therefore most convenient to let the acid salt prevail at first; to separate the superfluous quantity, by suffering the liquor to cool a little before filtration; and then proceed to the total evaporation of the aqueous fluid, which will leave behind it the neutral salt required. The most proper vessel for this purpose is a stone-ware one; iron discolours the salt.

Soluble tartar, in doses of a scruple, half a dram, or a dram, is a mild cooling aperient: two or three drams commonly loosen the belly; and an ounce proves pretty strongly purgative. Malouin says, it is equal in purgative virtue to the cathartic salt of Glauber. It is an useful addition to the purgatives of the resinous kind, as it promotes their operation, and at the same time tends to correct their griping quality. But it

it must never be given in conjunction with any acid; for all acids decompose it, absorbing its alkaline salt, and precipitating the tartar. On this account it is improper to join to it tamarinds, or such like acid fruits; which is too often done in the extemporaneous practice of those physicians who are fond of mixing different cathartics together.

SAL RUPELLENSIS.

Sel de Seignette, or Rochel salt.

Pharm. Paris.

Let the salt extracted from the ashes of the kelp or kali of Alicant be calcined till it melts; then dissolved in water, the solution filtered, and after due evaporation set by, that the salt may shoot into pure white crystals. Dissolve crystals of tartar in boiling water, and saturate the solution with the crystals of kali: the proportions necessary for this purpose will be, about sixteen ounces of the latter to twenty of the former. Duly exhale the liquor in the heat of a water-bath; and, after filtration, set it in the cold to crystallise.

SODA TARTARIZATA, vulgo SAL RUPELLENSIS.

Tartarised soda, commonly called Rochel salt.

Edinb.

The *sal Rupellensis* may be prepared from purified fossil alkaline salt and crystals of tartar, in the same manner as directed for the *tartarum solubile*.

THIS is a species of soluble tartar, made with the salt of kali or soda, which is the same with the mineral alkali, or basis of sea-salt: (see page 440.) It crystallises far more easily than the preceding preparation, and does not, like it, grow moist in the air. It is also considerably less purgative, but is equally

decompounded by acids. It appears to be a very elegant salt, and begins now to come into esteem in this country, as it has long been in France.

SAL ESSENTIALE

ACETOSÆ.

Essential salt of sorrel.

Edinb. +

Let the juice of sorrel, after settling and decantation from the feces, be evaporated till only one third remains; then strained through a flannel bag, and exhaled again till a pellicle appears upon the surface. Put the liquor into a glass vessel; and, a little olive oil being poured upon the top, set it by in a cellar till plenty of crystals are formed: these are to be gently washed with water, and afterwards dried.

After the same manner, essential salts are obtained from all acid, austere, astringent, and bitterish plants that contain but a small quantity of oil.

Herbs of a dry nature are to be moistened, in the bruising, with a little water, that the juice may be the more easily pressed out.

The waters of these plants, which are in vain endeavoured to be drawn over by distillation, may be obtained by dissolving a suitable quantity of their essential salts in common water.

SOME Pharmaceutical writers direct the plants to be gathered early in the morning; but this is of very little moment. In order to make the subject yield its juice readily, it should be chopt to pieces, and well bruised in a marble mortar, before it is committed to the press: the magma which remains in the bag, still containing no inconsiderable quantity of saline matter, may be advantageously boiled in water, and
the

the decoction added to the expressed juice. The whole may be afterwards depurated together, either by the method above directed, or by running the liquor several times through a linen cloth. In some cases, the addition of a considerable portion of water is necessary, that the juice, thus diluted, may part the more freely from its feculencies; on the separation of which, the success of the process in great measure depends.

The evaporation should be performed either in shallow glass basons, or in such earthen ones as are of a compact close texture; such are those usually called stone-ware. The common earthen vessels are subject to have their glazing corroded, and are so extremely porous, as readily to imbibe and retain a good quantity of the liquor; metallic vessels are particularly apt to be corroded by these acid kinds of juices.

The directions for the time of discontinuing the second evaporation are not so easily observed as one could wish. These juices are so viscid, and abound so much with heterogeneous matter, of a quite different nature from any thing saline, that a pellicle, or pure saline incrustation upon the surface, is in vain expected. Boerhaave therefore, and the more expert writers in pharmaceutical chemistry, with great judgment, direct the evaporation of the superfluous moisture to be continued until the matter has acquired the consistence of cream. If it be now suffered to stand for an hour or two in a warm place, it will, notwithstanding the former depurations, deposit a fresh sediment, from which it should be warily decanted before it is put into the vessel in which it is designed to be crystallized.

Some recommend an unglazed earthen vessel, as preferable for this purpose to a glass one; the smooth-

ness of the latter being supposed to hinder the salt from sticking thereto; whilst the juice easily insinuating itself into the pores of the former, has a great advantage of shooting its saline spicula to the sides. Others slightly incrustate the sides and bottom of whatever vessel they employ, with a certain mineral salt, which greatly disposes the juice to crystallize, which of itself it is very averse to: but as this addition is, with regard to its medical virtue, quite different from the salt here intended, we forbear to mention it.

The use of the oil is to preserve the juice uncorrupted, and to prevent it from running into fermentation or putrefaction, during the great length of time which this process requires: as much oil as will fully cover the surface of the liquor is sufficient for this purpose. The washing of the crystals is intended to cleanse them from the mucilaginous feculencies which adhere to them: it ought to be performed with the utmost caution, to prevent any of the salt itself from being dissolved. The liquor which remains after the crystallization, may be depurated by a gentle colature, and after due inspissation set to shoot again; when a farther yield of crystals will be obtained.

The process for obtaining these salts is very tedious, insomuch as scarce to be completed in less than seven or eight months; and the quantity of salt which the juices afford is extremely small: hence they are hardly ever made or expected in the shops. They may be somewhat sooner separated from the mucilaginous and other feculencies, by clarification with whites of eggs, and by adding very pure white clay. The chemists have contrived several other methods for expediting the process; among which the two following seem the most remarkable.

I i Take

Take any quantity of wormwood, *carduus benedictus*, or the like plants, gently dried in the shade. Pour thereon a suitable portion of spirit of wine, and digest them together with a soft heat till the menstruum has acquired a green colour. This tincture is to be put into a glass cucurbit, and distilled with the heat of a water-bath, till so much of the spirit is come over as that the remainder may be left of the consistence of honey. The whole being now suffered to remain unmoved till grown perfectly cold, beautiful pyramidal crystals will be found to have shot from the sides of the distilling vessel towards its centre. *Spießius, in Miscell. Berolin. continuat. ii. p. 91, 92.*

This gentleman relates likewise, that having made an essence (that is, a saturated tincture) of *elacampane* roots with spirit of wine, and kept it unmoved for a year, he found a great number of crystals shot from the bottom of the glass upwards, of the thickness of a quill, and about an inch long.—The crystals obtained by this method are said to be of the nitrous kind, but of a more subtle taste than the common nitre, impressing only an agreeable coolness upon the tongue.

The second process is from the celebrated Dr Stahl:

Take wormwood, brooklime, peltory, mercury, soapwort, or any other plants of the same kind, dried quick in a shady place. Cut the herb small, and pour thereon a sufficient quantity of highly-rectified spirit of wine: digest them together till the menstruum becomes saturated with the oil or resinous parts of the plant; then

pour off the tinged liquor, add a fresh parcel of spirit, and digest as before, continuing to add more of the menstruum, till such time as it no longer extracts any colour from the vegetable. The plant thus freed from its oily matter, is to be gently exsiccated, and boiled in water, till the liquor has taken up its saline parts: the decoction being then passed through a filtre, afterwards evaporated to a due consistence, and set by in a cool place, will shoot into saline crystals, which, on examination, prove manifestly nitrous. *Stahl's fund. chem. pag. 68, et alibi.*

The two foregoing processes agree but ill with each other: how far they are adequate to the purposes intended by them, has not yet been sufficiently examined. It is certain, that spirit of wine dissolves the subtle oils and the resins of vegetables, which prove a great impediment to the crystallisation of salts; from whence it should seem that the salt might afterwards be prepared by water from the residuum to much better advantage. But it is certain also, that this menstruum dissolves some of the native vegetable salts themselves; and that if the tincture is sufficiently loaded with the soluble parts of the subject, the salt separates, while the oily and resinous matter remain dissolved. Thus manna, an essential salt of the sweet kind, dissolves totally in rectified spirit; and, however foul before, is recovered white as snow, its oily impurities being left in the menstruum; and thus spirituous tinctures of celery, beet roots, and other plants of the sweet kind, deposit, on standing, true saccharine concretions. It is probable that one process is best adapted to some plants, and the other to others: the first

first, doubtless, is for those of the sweet kind; and the second for acid herbs, as sorrel and woodsorrel.

The virtues of the essential salts have not been sufficiently determined from experience. Thus much, however, is certain, that they do not, as has been supposed, possess the virtues of the subjects entire, excepting only the acids and sweets. The others seem to be, almost all of them, nearly similar, whatever plant they were obtained from. In watery extracts of wormwood, carduus, camomile, and many other vegetables, kept for some time in a soft state, I have often observed fine saline efflorescences on the surface, which had all nearly the same taste, somewhat of the nitrous kind. They are supposed by some to be at bottom no more than an impure species of volatile nitre (that is, a salt composed of the nitrous acid and volatile alkalis): those which were examined by the chemists of the French academy, deflagrated in the fire, and, being triturated with fixt alkalis, exhaled an urinous odour; plain marks of their containing those two ingredients.

SACCHARUM LACTIS.

Sugar of milk.

Pharm. Paris.

Take common whey of cows milk, made with calves rennet. Clarify it with whites of eggs; and, if it is not perfectly limpid, pass it through a filtre. Then evaporate it, in a glass vessel, in the heat of a water-bath, and set it by in a cellar to crystallize. The crystals are to be washed with cold water.

THIS preparation has been greatly celebrated in disorders of the breast, but is far from answering what has been expected from it. It has little sweetness, and is difficult

of solution in water. A saline substance, much better deserving the name of sugar, may be obtained by evaporating new milk, particularly that of the ass, to dryness, digesting the dry matter in water till the water has extracted its soluble parts, and then inspissating the filtered liquor. This preparation is of great sweetness, though neither white nor crystalline; nor is it perhaps in the pure crystallizable parts of milk that its medicinal virtues lie.

FLORES BENZOINI.

Flowers of benzoine.

Lond. and Edinb.

Put some powdered benzoine into an earthen pot (placed in sand, *L.*) and with a gentle heat sublime the flowers into a conical paper cap fitted to the pot.

(Or, the sublimation may be performed in a retort; the flowers will arise with a soft heat, into the neck, *L.*)

If the flowers have any yellow tinge, mix them with tobacco-pipe clay, and sublime again. '(If the flowers are rendered foul with oily matter, let them be purified by solution in warm water and crystallisation, *E.*')'

BENZOINE, exposed in a retort to a gentle fire, melts and sends up into the neck white, shining crystalline flowers, which are followed by an oily substance. On raising the heat a little (a recipient being applied to the neck of the retort) a thin yellowish oil comes over, intermingled with an acid liquor, and afterwards a thick butyraceous substance: this last, liquefied in boiling water, gives out to it a considerable quantity of saline matter (separable by filtration and proper exhalation) which appears in all respects similar to the flowers.

It appears therefore, that the

whole quantity of flowers which benzoine is capable of yielding, cannot be obtained by the above processes, since a considerable portion arises after the time of their being discontinued: that greatest part of the flowers arises with a less degree of heat than what is necessary to elevate the oil; but that if the operation is hastily conducted, or if the fire is not exceeding gentle, the oil will arise along with the flowers, and render them foul. Hence in the way of trade, it is extremely difficult to prepare them of the requisite whiteness and purity; the heat which becomes necessary, when large quantities of the benzoine are employed, being so great as to force over some of the oil along with them.

In order therefore to obtain these flowers in perfection, only a small quantity of benzoine should be put into the vessel at a time; and that this may not be any impediment to the requisite dispatch, a number of shallow, flat-bottomed, earthen dishes may be employed, each fitted with another vessel inverted over it. With these you may fill a sand-furnace; having fresh dishes charged in readiness to replace those in the furnace, as soon as the process shall appear finished in them: the residuum of the benzoine should be scraped out of each of the vessels before a fresh parcel is put in.

These flowers, when made in perfection, have an agreeable taste and fragrant smell. They totally dissolve in spirit of wine; and likewise, by the assistance of heat, in water; but separate again from the latter upon the liquor's growing cold, shooting into saline spicula, which unite together into irregular masses. By the mediation of sugar they remain suspended in cold water, and thus form an elegant balsamic syrup. Some have held them in great esteem, as pectoral and sudorific, in

the dose of half a scruple or more: but the present practice rarely makes use of them, on account of the offensive oil which, as usually prepared, they are tainted with, and from which a fresh sublimation from tobacco-pipe clay, 'as formerly practised,' does not free them so effectually as might be wished. The observations above related, point out the method of depurating them more perfectly, viz. by solution, filtration, and crystallisation.

SAL SEDATIVUS.

Salt of borax, called Sedative salt.

Put eight ounces of powdered borax into a wide-necked retort; pour thereon three ounces of water; and then add three ounces of oil of vitriol. Place the retort in a proper furnace, adapt to it a receiver, and increase the fire till the vessel becomes red hot. The sedative salt will arise into the neck in form of thin shining plates, which are to be swept out with a feather; and a little liquor will pass into the receiver. When the matter in the retort is grown cool, pour back upon it the distilled liquor, and sublime again. Repeat this process so long as the borax continues to yield any considerable quantity of saline flowers.

Or,

Dissolve the borax in a sufficient quantity of warm water, and add thereto the oil of vitriol. Evaporate this mixture till thin plates begin to appear upon the surface; then suffer the fire to decay, and let the vessel stand unmoved till plenty of crystals are formed, which are to be well rinsed with cold water, and then dried for use.

In the preparation of this salt by sublimation, the fire must be expeditiously

ditionally raised when the matter begins to grow dry; for it is only at this period that the salt sublimes. The sublimed salt itself, in a perfectly dry state, proves fixt in the fire: if moistened with water, and then exposed to a smart heat, part of it continues to rise, till the moisture is wholly exhaled; after which, nothing more can be forced up by heat, till the salt is again moistened. Hence the use of returning the distilled liquor, and repeating the sublimations. Lemery says, he found flowers continue to rise till the thirty-sixth sublimation; and that the quantity obtained by all these sublimations amounted to half an ounce and thirty-five grains from two ounces of borax.

The part of the borax which does not sublime, appears to be the same (when the common refined borax of the shops is made use of) with the alkaline salt of sea-salt: the sedative salt, united with that alkali, recomposes borax again. The extrication of the sedative salt from the borax happens on the same principle as that of the marine acid from sea-salt, viz. the vitriolic acid uniting with the alkali; and the residuum is in both cases the same, viz. the salt called *Sal mirabile*, or Glauber's salt: the sedative salt may be extricated also from borax by other acids, but most commodiously and effectually by the vitriolic.

The process by crystallisation is less troublesome than that by sublimation; but the salt proves generally less white, and is apt likewise to retain a part of the Glauber's salt, especially if the evaporation is too long protracted.

The sedative salt appears to the taste a neutral salt; but examined with alkalis has the properties of an acid, effervescing, uniting, and crystallising with them, and destroying their alkaline quality. It dissolves

both in water and in spirit of wine; though not very readily in either. As to its virtues, it is supposed to be a mild anodyne, (whence its name) to calm the heat of the blood in burning fevers, to prevent or remove delirious symptoms, and allay spasmodic affections, whether hypochondriacal or hysterical, at least for a time. The dose is from two to eighteen grains, in any proper liquor. See ACID OF BORAX, Part I.

SPIRITUS, SAL, ET OLEUM SUCCINI.

Spirit, salt, and oil of amber.

Lond.

Distil amber in a sand-heat gradually increased: there will come over a spirit, an oil, and a salt fouled with the oil.

The oil distilled again by itself, is divided into a thinner oil which arises; and a thicker part that remains behind, called balsam of amber.

The salt is to be boiled in the distilled spirit, or in common water, and set to crystallise; by this means it is freed from its adhering oil. The oftener this is repeated, the purer it will be.

OLEUM ET SAL SUCCINI.

Edinb.

Mix powdered white amber with thrice its weight of clean sand, and put them into a glass retort, of which the mixture may fill one half: then adapt a large receiver, and distil in a sand-furnace, with a fire gradually increased. At first a spirit will come over, with some yellow oil; then more yellow oil, along with a little salt; and upon raising the heat, more of the salt, with a reddish and black coloured oil.

When the distillation is finished, empty the liquor out of the receiver; and having collected to-

gether the salt which adheres to the sides, dry it by gentle pressure between the folds of some spongy paper; 'then purify it by solution in warm water and crystallisation.'

The oil may be separated from the spirit by filtration.

OLEUM SUCCINI RECTIFICATUM.

Edinb.

'Distil the oil in a glass retort with six times its quantity of water till two thirds of the water have passed into the receiver. Then separate the rectified oil from the water, and keep it for use in close shut vessels.

'THE Edinburgh College have rejected what is here called the spirit, as being nothing else than the watery parts, fraught with the inert impurities of the bitumen and a very small portion of the salt.' In the distillation of amber, the fire must for some time be continued gentle, scarce exceeding the degree at which water boils, till the aqueous phlegm and thin oil have arisen; after which it is to be slowly increased. If the fire was urged hastily, the amber would swell up, and rise in its whole substance into the receiver, without undergoing the required decomposition or separation of its parts. When sand or other like intermedia are mixed with it, it is less subject to this rarefaction, and the fire may be raised somewhat more expeditiously; though this little advantage is perhaps more than counterbalanced by the room which the sand takes up in the retort.

Our chemists generally leave the receiver unluted, that it may be occasionally removed as the salt rises and concretes in the neck of the retort; from whence it is every now and then scraped out to prevent the

oil from carrying it down into the receiver. When a gross thick oil begins to arise, and no more salt appears, the distillation is stopt, tho' it might, perhaps, be continued longer to advantage.

Mr Pott informs us, (in a curious dissertation on the salt of amber, published in the ninth volume of the Memoirs of the Academy of Sciences of Berlin) that the Prussian workmen, who prepare large quantities of the salt for exportation, from cuttings and small pieces of amber, perform the distillation without any intermedium, and in an open fire; that sweeping out the salt from the neck of the retort being found too troublesome, they suffer the oil to carry it down into the receiver, and afterwards separate it by means of bibulous paper, which imbibes the oil, and leaves the salt dry; which paper is afterwards squeezed and distilled: that they continue the distillation till all that can be forced over has arisen, with care only to catch the last thick oil in a separate receiver; and that from this they extract a considerable quantity of salt, by shaking it in a strong vessel with three or four fresh portions of hot water, and evaporating and crystallising the filtered waters.

The spirit of amber so called, is no more than a solution of a small portion of the salt in phlegm or water; and therefore is very properly employed for dissolving the salt in order to its crystallisation.

The salt, freed from as much of the oil as spongy paper will imbibe, retains so much as to appear of a dark brown colour. Mr Pott says, the method he has found to succeed best, and with least loss, is, to dissolve the salt in hot water, and put into the paper, through which the solution is to be filtered, a little cotton slightly moistened with oil of amber: this, he says, detains a good deal

deal of the oil of the salt, and the solution passes through the more pure. The liquor being evaporated with a very gentle fire, as that of a water-bath, and set to shoot, the first crystals prove transparent, with a slight yellowish tinge; but those which follow are brown, oily, and bitter, and are therefore to be further depurated in the same manner. The whole quantity of crystals amounts to about one-thirtieth of the weight of the crude amber employed. By sublimation from sea-salt, as directed in former editions of the Edinburgh Pharmacopœia, the salt is thought to be more perfectly and more expeditiously purified: Mr Pott objects to sublimation, that a part of the salt is decomposed by it, a coaly matter being left behind, even though the salt was previously purified by crystallisation: it may be presumed, however, that this coal proceeds rather from the burning of some remains of the oily matter, than from the decomposition of any part of the true salt.

Pure salt of amber has a penetrating, subastringent acid, taste. It dissolves both in water and in rectified spirit; though not readily in either, and scarcely at all in the latter without the assistance of heat: of cold water in summer, it requires for its solution about twenty times its own weight; of boiling water, only about twice its weight. Exposed in a glass vessel, to a heat a little greater than that of boiling water, it first melts, then rises in a white fume, and concretes again in the upper part of the glass into fine white flakes, leaving, unless it was perfectly pure, a little coaly matter

behind. It effervesces with alkalis both fixt and volatile, and forms with them neutral compounds, greatly resembling those composed of the same alkalis and vegetable acids. Mixed with acid liquors, it makes no sensible commotion. Ground with fixt alkaline salts, it does not exhale any urinous odour. By these characters, it is conceived, this salt may be readily distinguished from all the other matters that have been mixed with, or vended for it. With regard to its virtue, it is accounted aperient, diuretic, and, on account of its retaining some portion of the oil, antihysterical: Boerhaave gives it the character of *diureticorum et antihystericorum princeps*. Its great price, however, has prevented its coming much into use; and perhaps its real virtues are not equal to the opinion generally entertained of them.

The rectified oil has a strong bituminous smell, and a pungent, acrid taste. Given in a dose of ten or twelve drops, it heats, stimulates, and promotes the fluid secretions: It is chiefly celebrated in hysterical disorders, and in deficiencies of the uterine purgations. Sometimes it is used externally, in liniments for weak or paralytic limbs and rheumatic pains. This oil differs from all those of the vegetable kingdom, and agrees with the mineral petrolea, in not being soluble, either in its rectified or unrectified state, by spirit of wine, fixt alkaline lixivia, or volatile alkaline spirits; the oil, after long digestion or agitation, separating as freely as common oil does from water.

C H A P. IX.

PREPARATIONS of SULPHUR.

FLORES SULPHURIS.

*Flowers of sulphur.**Lond.*

SUBLIME sulphur in proper vessels; and reduce the flowers, that concrete, into powder, either in a wooden mill, or in a marble mortar with a wooden pestle.

Edinb. +

Put any quantity of yellow sulphur, grossly powdered, into an earthen cucurbit placed in a sand-furnace; and having fitted on a glass blind-head, or inverted upon it another earthen cucurbit, begin the sublimation with a gentle heat, which may be afterwards increased. The flowers will arise into the uppermost part of the vessels, from whence they are to be swept out and carefully washed with very hot water.

THIS process is rarely attempted by the apothecaries, a large apparatus being necessary for performing it to advantage. Those who prepare the flowers of brimstone in quantity, use for the sublimating vessel a

large iron pot, capable of holding two or three hundred weight; this communicates with an arched chamber, lined with glazed tiles, which serves for the recipient.

This preparation of sulphur makes no change in its qualities; only separating its impurities, and at the same time reducing it into a finer powder than it can easily be brought to by other means. At the bottom of the subliming vessel there remains a ponderous grey-coloured mass, composed of sand, earth, stony, and sometimes metallic matters, with a small portion of sulphur that has escaped the subliming heat. This is usually broken in pieces, and vend-
ed in the shops under the name of sulphur vivum.

FLORES SULPHURIS LOTI.

*Washed flowers of sulphur.**Lond.*

Pour upon the flowers as much water as will arise to the height of four fingers above them, and boil them for some time; then pouring off this water, let some cold water be added, and thoroughly wash

wash the flowers; after which they are to be dried for use.

As the flowers of sulphur are generally sublimed into very capacious rooms, which contain a large quantity of air, or in vessels not perfectly close; some of those that arise at first are apt to take fire, and thus are changed into a volatile acid vapour, which mingling with the flowers that sublime afterwards, communicates to them a notable degree of acidity. In such case, the ablu-tion here directed is for the general use of the medicine absolutely necessary; for the flowers, thus tainted with acid, sometimes occasion gripes, and may, in other respects, be productive of effects different from those of pure sulphur. The Edinburgh College, as appears in the foregoing process, allow only the washed flowers to be kept in the shops: there are, however, some particular combinations, to which they are supposed to be better adapted when unwashed, as their union with mercury into æthiops mineral; and accordingly for that preparation the unwashed flowers are directed by the London College.

BALSAMUM SULPHURIS SIMPLEX.

Simple balsam of sulphur.

Lond.

Boil flowers of sulphur, with four times their weight of oil olive, in a pot lightly covered, until they unite into the consistence of a balsam.

BALSAMUM SULPHURIS CRASSUM.

Thick balsam of sulphur.

Edinb.

Take eight ounces of olive oil, and one ounce of flowers of sulphur. Boil them together over a gentle fire, keeping them continually

stirring till they come to the consistence of a balsam.

THE vessel they are boiled in ought to be capable of holding at least three times the quantity of the ingredients. As soon as the oil begins to act upon the sulphur, which happens nearly at the point of ebullition, the mixture rarifies very much; so as, if not prudently removed from the fire, to run over into the furnace; and as the matter is very susceptible of flame, dangerous consequences may ensue, especially if the quantity is large. The operator ought therefore to be upon his guard in the management of this process.

BALSAMUM SULPHURIS BARBADENSE.

*Balsam of sulphur with
Barbadoes tar.*

Lond.

This is made after the same manner as the foregoing, by using Barbadoes tar instead of the oil.

BALSAMUM SULPHURIS TEREBINTHINATUM.

Balsam of sulphur with oil of turpentine.

Edinb. +

Take two ounces of washed flowers of sulphur, and six ounces of oil of turpentine.

Digest them together, in a sand-heat, till the oil is saturated with the sulphur.

BALSAMUM SULPHURIS ANISATUM.

Balsam of sulphur with oil of aniseed.

Edinb. +

Take two ounces of washed flowers of sulphur; six ounces of oil of turpentine; and four ounces of essential oil of aniseeds.

Digest them together as in the preceding process.

THESE

THESE preparations are more conveniently and safely made in a tall glass body, with the mouth at least an inch in diameter, than in the circulatory or close vessels in which they have commonly been directed to be prepared: for when the sulphur and oil begin to act vehemently upon each other, they not only rarify into a large volume, but likewise throw out impetuously great quantities of an elastic vapour; which, if the vessels are closed, or the orifices not sufficient to allow it a free exit, infallibly burst them: Hoffman relates a very remarkable history of the effects of an accident of this kind. In the vessel above recommended, the process may be completed, without danger, in four or five hours, by duly managing the fire; which should be very gentle for some time, and afterwards increased so as to make the oil just bubble or boil; in which state it should be kept till all the sulphur appears to be taken up.

Essential oils employed as menstrua for sulphur, undergo a great alteration from the degree of heat necessary for enabling them to dissolve the sulphur; and hence the balsams have not near so much of their flavour as might be expected. It should therefore seem more eligible to add a proper quantity of the essential oil to the simple balsam; these readily incorporate by a gentle warmth, if the vessel be now and then shaken. Sixteen parts of essential oil, and six of the balsamum sulphuris crassum, compose a balsam more elegant than those made in the foregoing manner, and which retains so much of the flavour of the oil, as is in some measure sufficient to cover the taste of the sulphur, and render it supportable.

The balsams of sulphur have been strongly recommended in coughs,

consumptions, and other disorders of the breast and lungs. But the reputation which they have had in these cases, does not appear to have been built upon any fair trial or experience of their virtues. They are manifestly hot, acrimonious, and irritating; and therefore should be used with the utmost caution. They have frequently been found to injure the appetite, offend the stomach and viscera, parch the body, and occasion thirst and febrile heats. The dose of the simple balsam is from ten to forty drops: those with essential oils are not given in above half these quantities. Externally, they are employed for cleansing and healing foul running ulcers. Boerhaave conjectures, that their use in these cases gave occasion to the virtues ascribed to them when taken internally.

HEPAR SULPHURIS.

Liver of sulphur.

Edinb. +

Take three ounces of flowers of sulphur, and one ounce and a half of powdered salt of tartar. Melt the sulphur in an earthen dish under a chimney, and add to it by degrees the salt of tartar; keeping the matter constantly stirring with a spatula till it has acquired a red colour: care must be had to prevent its taking fire.

It is much more convenient to melt the sulphur first by itself, and add the salt of tartar by degrees, as here directed, than to grind them together, and afterwards endeavour to melt them as ordered in former editions: For in this last case the mixture will not flow sufficiently thin to be properly united by stirring; and the sulphur either takes fire, or sublimes in flowers; which probably has been the reason why so large a proportion of it has been commonly di-

directed. Even in the present method a considerable part of the sulphur will be dissipated; and if it was not, the hepar would not be of its due quality: for one part of sulphur requires two of the alkaline salt to render it perfectly soluble in water, which this preparation ought to be.

The hepar sulphuris has a fetid smell, and a nauseous taste. Solutions of it in water, made with sugar into a syrup, have been recommended in the same intentions as the balsams above mentioned. Our Pharmacopœias, nevertheless, have deservedly rejected this syrup, as common practice has almost done the balsams. 'Solutions of the hepar, in water, have been also recommended in herpetic and other cutaneous affections. Some physicians have even employed this solution, in a large quantity, as a bath for the cure of psora.'

The hepar, digested in rectified spirit of wine, imparts a rich gold colour, a warm, somewhat aromatic taste, and a peculiar, not ungrateful smell. A tincture of this kind is kept in the shops under the name of another mineral.

SULPHUR PRÆCIPITATUM.

Precipitated sulphur.

Lond.

Boil flowers of sulphur in water, with thrice their weight of quicklime, till the sulphur is dissolved. Filtre the solution, and drop into it some of the weak spirit of vitriol: this will throw down a precipitate, which is to be washed in fresh portions of water, till it becomes insipid.

LAC SULPHURIS.

Edinb. +

Boil the hepar sulphuris, reduced to

powder, in four times its quantity of water for three hours; adding more water if there is occasion. Then filtre the solution whilst hot, and drop into it spirit of vitriol till the effervescence ceases; a powder will be precipitated to the bottom, which is to be washed with hot water, and afterwards dried for use.

THE method of preparing this lac, as it is called, with hepar sulphuris, is the most expeditious, and least troublesome, provided the hepar be well made: and, on the other hand, quicklime gives the preparation a more saleable whiteness. Some have been accustomed to add to the quicklime a portion of alkaline salt, with a view to promote its dissolving power.

The medicine is nearly the same in both cases. It would be exactly the same, if the precipitation was performed with any other acid than the vitriolic: for this acid forms with the dissolved lime a selenite concrete, which precipitates along with the sulphur, and is not afterwards separable by any ablution; whilst the neutral salt, which the acid forms with the fixt alkali of the hepar, may be totally dissolved and washed off by repeated ablution with hot water; and the combinations of all the other acids, both with the lime and alkali, are separated by cold water. It is probably to the admixture of the white selenitic matter, resulting from the vitriolic acid and lime, that the finer colour of the preparation made with lime is owing.

Pure lac sulphuris is not different in quality from pure sulphur itself: to which it is preferred in unguents, &c. only on account of its colour. The whiteness does not proceed from the sulphur having lost any of its parts in the operation, or from any

any new matter superadded: for if common sulphur be ground with alkaline salts, and set to sublime, it arises of a like white colour, the whole quantity of the alkali remaining unchanged; and if the lac be melted with a gentle fire, it returns into yellow sulphur again.

It may be observed, that the name *lac sulphuris*, or *milk of sulphur*, applied among us to the precipitate, is by the French writers confined to the white liquor before the precipitate has fallen from it.

TINCTURA SULPHURIS VOLATILIS.

Volatile tincture of sulphur.

Take of

Flowers of sulphur, six ounces;

Sal ammoniac, one pound;

Quicklime, a pound and a half.

Sprinkle some water on the lime, and when slaked and fallen into powder, grind it first with the sulphur, and afterwards with the sal ammoniac in small quantities at a time: then distill the mixture in a retort, with a fire gradually increased. The distilled liquor is to be kept in a bottle close stoppt for use.

THIS liquor has a strong offen-

sive smell, somewhat similar to that which arises in the precipitation of lac sulphuris. The vapour in both cases spreads to a considerable distance, changes silver or copper utensils to a brown or blackish colour, and produces disagreeable alterations in many medicinal preparations: to this circumstance therefore due regard ought to be had in the performance of that process, and in the keeping of this tincture. If a piece of paper, written upon with a saturated solution of lead in vegetable acids, and gently dried, be placed in the middle of a quire of paper, or of a pretty thick book, and brought near the unstopt orifice of the bottle containing this tincture, the vapour will quickly reach it, and change the colourless writing to a legible black.

Hoffman has a great opinion of the virtues of this preparation. He says a mixture of one part of the tincture with three of spirit of wine, in a dose of thirty or forty drops, proves a most powerful diaphoretic; and that a liquor composed of this and camphor, takes off the pain of the gout, by bathing the feet with it. This tincture may be a powerful medicine, but it is certainly a very unpleasant one.

C H A P. X.

METALLIC PREPARATIONS.

S E C T. I.

PREPARATIONS OF GOLD.

GOLD is the most ponderous and perfect of the metals: it abides fixt and unalterable in the strongest fires employed in pharmacy, and is not acted upon by alkaline or any simple acid menstruum, 'except the muriatic acid, dephlogisticated by manganese.' It dissolves in aqua regia into a yellow transparent fluid: This solution stains the skin, &c. purple; the ethereal spirit of wine, and some essential oils, take up the gold from it: alkalis precipitate the metal in form of a yellowish mud, which exsiccated, and exposed to a small heat, violently explodes.

As to the medicinal virtues of this metal, experience has sufficiently shown that it is not possessed of any valuable ones. In its metallic form, however finely comminuted, it proves inactive; when satiated with acid, corrosive; and in the intermediate states, either insignificant or unsafe.

AURUM POTABILE.

Potable gold.

Dissolve, with a moderate heat, half a dram of fine gold in two ounces of aqua regia; and add to the solution one ounce of the essential oil of rosemary. Shake them together, and then suffer them to rest: The acid loses its gold yellow colour; and the oil, which arises to the surface, becomes richly impregnated therewith. Separate the oil by decantation, and add to it four or five ounces of rectified spirit of wine; digest this mixture for a month, and it will acquire a purplish colour.

THERE have been many preparations of this kind contrived by the designing pretenders to alchemy, and imposed upon the credulous and unwary, as cordials and diaphoretics of inestimable value. The above seems to be one of the best and safest of them; though it would

would be equally serviceable as a medicine, if made without the ingredient which it receives its name from. The gold is indeed taken up from the acid, and kept for a time dissolved by the oil; but on standing it totally separates, in form of fine yellow films, like leaf gold. The effect is the same, whether the oil or the vinous spirit be mixed with the solution of the gold in aqua regia: the only difference is, that the gold is thrown off from the oil to the sides of the glass; while the spirit revives it into such subtile films as to float upon the surface of the liquor. No means have yet been found of permanently combining gold with either oils or vinous spirits.

AURUM FULMINANS.

Fulminating gold.

Paris.

Put a dram of filings of gold, with half an ounce of aqua regia newly made, into a matras, placed in sand. When the menstruum ceases to act, pour off the solution; and, if any of the gold is left, add as much more aqua regia as shall be sufficient to dissolve it. Dilute the solution with ten times its quantity of warm water; and then drop in oil of tartar per deliquium till the effervescence and precipitation cease. The whole being now suffered to settle, the clear liquor is to be poured off, and the precipitated matter washed with warm water till it becomes insipid, and afterwards efficcated.

This powder requires to be ex-

ficcated with the utmost precaution; for in a small heat it explodes with great violence; the same effect ensues likewise upon strongly rubbing it. This property has given name to the preparation; and is the only one on account of which it is at present taken any notice of. It has been recommended indeed, in fevers, as a diaphoretic, in the dose of a few grains. Its more certain effect, however, is to operate downwards, and that not always with safety: König and Ludovici relate, that in some febrile cases, it has occasioned almost mortal diarrhœas; and Stahl (*de Proxeucrifi Medica*, sect. viii.) reports, that the intestines have been found eroded by it. The more thoroughly it is washed and edulcorated, the less corrosive it is in the human body, and the less violently it fulminates when heated.

As metallic calces are known to absorb fixed air, there is much reason to believe with Dr Black, that the fulmination of this substance may in part be owing to the discharge of that elastic fluid, transferred from the mild alkali to the calx. Some people, not contented with this theory, have alleged, that the explosion was owing to the presence of an alkaline air as a combustible matter. Mr Bergman, and some others, have accordingly found, that this property of the aurum fulminans could be entirely destroyed by a heat incapable of making it fulminate, but able, gradually, to dissipate an elastic fluid, which was found to be alkaline air: But we are not informed whether it was not also mixed with fixed air.

SECT.

S E C T. II.

PREPARATIONS OF SILVER.

SILVER is the most permanent in the fire of all the metals after gold. It dissolves in the pure nitrous acid, into a colourless transparent liquor, intensely bitter and corrosive. This solution exsiccated, furnishes the shops with an useful caustic; which has likewise been taken internally in small doses, and mixed with other substances, as an hydragogue: it stains the skin black.

CAUSTICUM LUNARE.

The lunar caustic.

Lond.

Let pure silver be dissolved in about twice its weight of aquafortis, upon warm sand: then gently increase the heat until a dry mass is left. Melt this in a crucible, that it may be poured into proper moulds, carefully avoiding overmuch heat, lest the matter should grow too thick.

SAL ARGENTI, vulgo CAUSTICUM LUNARE.

Salt of silver, commonly called Lunar caustic.

Edinb.

Take of

Purest silver, flatted into plates, and cut in pieces, four ounces;

Weak nitrous acid, eight ounces;

Purest water, four ounces.

Dissolve the silver in a phial with a gentle heat, and evaporate the solution to dryness. Then put the mass into a large crucible, and apply the heat, at first gently, and augment it by degrees till the mass flows like oil; then pour it into iron pipes made for this purpose, previously heated

and greased. Lastly, put it up in glass vessels close stopped.

Strong spirit of nitre will dissolve somewhat more than half its weight of pure silver; and the weaker of the aqua fortes, formerly described, proportionably less, according to their quantity of pure nitrous acid. Sometimes this spirit contains a portion of the vitriolic, or marine acids; which, however minute, renders it unfit for dissolving this metal, and should therefore be carefully separated before the solution is attempted. The method which the refiners employ for examining the purity of their aquafortis, and purifying it if necessary, is to let fall into it a few drops of a perfect solution of silver already made: if the liquor remains clear, and grows not in the least turbid or whitish, it is fit for use; otherwise, they add a small quantity more of the solution, which immediately turns the whole of a milky white colour: the mixture being then suffered to rest for some time, deposits a white sediment; from which it is warily decanted, examined afresh, and, if need be, farther purified by a fresh addition of the solution. See page 466.

The silver flatted into thin plates, as directed in the second of the above processes, needs not be cut in pieces; the solution will go on the more speedily, if they are only turned round into spiral circumvolutions, so as to be conveniently got into the glass, with care that the several surfaces do not touch one another. By this management, a greater extent of the surface is exposed to the action

action of the menstruum, than when the plates are cut in pieces and laid above one another. Good aquafortis will dissolve about half its weight of silver; and it is not advisable to use a greater quantity of the menstruum than is sufficient for effecting the solution, for all the surplus must be evaporated in the subsequent fusion.

It is necessary to employ very pure water: for if hard water was used in this process, the nitrous acid would forsake a part of the silver to join with the calcareous earth of the imperfect nitrous selenite; whereby a part of the silver would be precipitated.

The crucible ought to be large enough to hold five or six times the quantity of the dry matter; for it bubbles and swells up greatly, so as otherwise to be apt to run over. During this time, also, little drops are now and then spirted up, whose causticity is increased by their heat, and which the operator ought therefore to be on his guard against. The fire must be kept moderate till this ebullition ceases, and till the matter becomes consistent in the heat that made it boil before: then quickly increase the fire till the matter flows thin at the bottom like oil, on which it is to be immediately poured into the mould, without waiting till the fumes cease to appear; for when this happens, the preparation proves not only too thick to run freely into the mould, but likewise less corrosive than it is expected to be.

In want of a proper iron mould, one may be formed of tempered tobacco-pipe clay, not too moist, by making in a lump of it, with a smooth stick, first greased, as many holes as there is occasion for: pour the liquid matter into these cavities, and when congealed take it out by breaking the mould. Each piece is to be wiped clean from the grease,

and wrapt up in dry soft paper, not only to keep the air from acting upon them, but likewise to prevent their corroding or discolouring the fingers in handling.

This preparation is a strong caustic; and frequently employed as such, for consuming warts and other fleshy excrescences, keeping down fungous flesh in wounds or ulcers, and other like uses. It is rarely applied where a deep eschar is required, as in the laying open of imposthumations and tumours; for the quantity necessary for these purposes, liquefying by the moisture of the skin, spreads beyond the limits in which it is intended to operate.

PILULÆ LUNARES.

The lunar pills.

Dissolve pure silver in aquafortis, as in the foregoing process; and after due evaporation, set the liquor to crystallise. Let the crystals be again dissolved in common water, and mingled with a solution of equal their weight of nitre. Evaporate this mixture to dryness, and continue the exsiccation with a gentle heat, keeping the matter constantly stirring till no more fumes arise.

HERE it is necessary to continue the fire till the fumes entirely cease, as more of the acid is required to be dissipated than in the preceding process. The preparation is, nevertheless, in taste very sharp, intensely bitter and nauseous: applied to ulcers, it acts as a caustic, but much milder than the foregoing. Boerhaave, Boyle, and others, greatly commend it in hydropic cases. The former assures us, that two grains of it made into a pill with crumb of bread and a little sugar, and taken on an empty stomach (some warm water, sweetened with honey, being drank immediately after), purge gently

gently without griping, and bring away a large quantity of water, almost without the patient's perceiving it: that it kills worms, and cures many inveterate ulcerous dis-

orders. He nevertheless cautions against using it too freely, or in too large a dose; and observes, that it always proves corrosive and weakening, especially to the stomach.

S E C T. VI.

PREPARATIONS OF IRON.

IRON calcines by fire the most easily, and melts the most difficultly, of all the metals. Sulphur promotes its fusion, and changes it into a substance not greatly dissimilar to a combination of the metal with vitriolic acid. All acids dissolve this metal; even the air corrodes it into a rust or calx. 'But it is perhaps the fixed air or aerial acid, constantly floating in the atmosphere, which produces this effect.'

Iron, in its metallic form, or lightly calcined, or combined with vegetable or with mineral acids, acts in the human body in the same manner, (but with different degrees of power), by constringing the fibres. In all these states it promotes or restrains secretions, where the deficiency or excess proceeds from a laxity and debility of the vessels; and in general raises the pulse and quickens the circulation. The calces seem to be the least active preparations; the crude metal, duly comminuted, is more easily soluble in the animal fluids; and, if acedent juices are lodged in the prime viæ, soon manifests its operation by nidorous eructations, and the black colour of the alvine feces: if previously combined with saline bodies, it scarce ever fails of taking effect.

As the calces of iron are scarcely dissoluble in acids, it has been concluded that they are not soluble in the human body, and that therefore they are to be looked upon no

otherwise than as a mere inactive earth. But admitting the absolute indissolubility of iron while it continues a calx, it must be observed, that the calces of this metal are remarkably easy of revival into their metallic state. Mr Baumé relates, that calx of iron, digested for an hour or two in oil olive, resumes its perfect metallic nature, so as to be attracted by the magnet, and totally soluble in acids; from whence he infers, that a like revival of the metal happens in the human body. It is matter of common observation, that calces of iron tinge the excrements black, a sure mark of their taking effect: though their effect appears to be neither so speedy nor so great as that of iron in some other forms.

FERRI LIMATURA PURIFICATA.

*Purified filings of iron.
Edinb.*

- * Apply a magnet to a sieve placed upon filings of iron, so as the filings shall be attracted upwards through the sieve.'

CHALYBIS RUBIGO PRÆPARATA.

*Rust of steel prepared.
Lond.*

Expose filings of steel to the air, frequently moistening them with vinegar or water until they change into rust; then grind them in a

K k mor-

mortar, and pouring on water, wash over the more subtil powder. The remainder is to be exposed afresh to the air, and moistened as at first, then triturated and washed again, and the powders that have been washed over, dried, and kept for use.

FERRI RUBIGO, vulgo FERRI LIMATURA PREPARATA.

Rust of iron, commonly called Shavings of iron prepared.

Edinb.

‘Set purified filings of iron in a moist place, that they may turn to rust, which is to be ground into an impalpable powder.’

THE cleansing of iron filings by means of a magnet is very tedious, and does not answer so well as might be expected; for if they are rusty, they will not be attracted by it, or not sufficiently: nor will they by this means be entirely freed from brass, copper, or other metallic substances which may adhere to them. It appears from the experiments of Henckel (*Pyritolog. cap. vom eisen im kiesel*), that if iron be mixed by fusion with even its own weight of any of the other metals, regulus of antimony alone excepted, the compound will be vigorously attracted by the loadstone.—The rust of iron is to be procured at a moderate rate from the dealers in iron, free from any impurities, except such as may be washed off by water.

The rust of iron is preferable as a medicine to the calces, or croci, made by a strong fire. Hoffman relates, that he has frequently given it with remarkable success in obstinate chlorotic cases accompanied with excessive headachs and other violent symptoms; and that he usually joined with it pimpinella, arum root, and salt of tartar, with a little cinnamon and sugar. The

dose is from four or five grains to twenty or thirty; some have gone as far as a dram: but all the preparations of this metal answer best in small doses, which should rather be often repeated than enlarged.

FERRI SQUAMÆ PURIFICATÆ.

Scales of iron purified.

Edinb.

‘Let the scales of iron, which may be had at the anvils of the workmen, be purified by the magnet; for the magnet only attracts the smaller and purer parts, leaving the more thick and impure behind.’

‘THIS is, perhaps, of all others the most eligible form of obtaining the pure metal in such a divided state as to render it easily acted upon by different menstrua.’

ÆTHIOPS MARTIALIS.

Martial ethiops.

Put filings of steel into an unglazed earthen vessel, with so much water as will stand above them about four inches; the whole is to be well stirred every day, and more water supplied as that in the vessel exhales, so that the filings may remain always covered: continue this procedure for several months, till they lose their metallic aspect, and are reduced to a fine powder of an inky blackness.

THIS preparation is described by Lemery in the Memoirs of the French Academy. It is said, that if the filings are left unstirred for some days, they unite together so firmly, that the mass is scarcely to be beaten into powder by blows of a hammer: if they are left for a little while uncovered with water, the deep black colour does not succeed,

ceed, a part of them changing into rust. Mr Malouin observes, that this ethiops is better fitted for general use than any other preparation of iron; that the metal is here in as subtile a state as in the croci of iron; and that it is no more decomposed or changed in its nature than the crude filings are. He therefore recommends substituting it to the filings and croci, in doses of from four grains to eighteen. The tediousness of the process, however, has prevented its coming into use; especially as it does not promise any advantage above the common chalybeate preparations, to counterbalance that inconvenience.

CHALYBS CUM SULPHURE PRÆPARATUS.

Steel prepared with sulphur.

Lond.

Heat the steel with a very fierce fire to a strong white heat; and in this state apply it to a roll of sulphur held over a vessel of water; the steel will melt, and fall down in drops, which are to be picked out from the sulphur that runs down with them, and ground into an impalpable powder.

It has been supposed by many, that this preparation is no other than common brimstone, and that it contains nothing of the steel. If the steel indeed is not made extremely hot, it will not melt on applying it to the sulphur, and the latter will run into the water by itself: but if the metal is heated to the degree above directed, it will readily melt and fall down in drops of a brown colour; whilst the sulphur runs into long yellow strings.

The heat requisite for this purpose, is not easily procurable in the common furnaces of the apothecary: and even if the steel is sufficiently heated at first, it will soon become

too cool to be corroded by the sulphur. For this reason, and on account of the offensive fumes which arise very copiously, and which are not avoidable by the operator, this process has been long neglected. The shops have been generally supplied with a preparation of steel with sulphur made at an easier rate in the following manner.

MARS SULPHURATUS.

Sulphurated iron.

Edinb. +

Mix filings of iron with twice their weight of powdered sulphur, and as much water as is sufficient to make them into a paste; which on standing at rest for six hours, will swell up. The matter is then to be pulverised, put by degrees into a hot crucible to deflagrate, and keep continually stirring with an iron spatula till it falls into a deep black powder.

If the quantity of this mixture is considerable, and strongly pressed down, it will not only swell on standing for some hours, but will heave up very weighty obstacles, and burst out into flame.

CROCUS MARTIS APERIENS.

Opening crocus of iron.

This is made by keeping the foregoing preparation longer over the fire, till it assumes a red colour.

CROCUS MARTIS ASTRINGENS.

Astringent crocus of iron.

Edinb.

This is made from the opening crocus of iron, by reverberating it for a long time in the most extreme degree of heat.

THESE preparations differ from one another in virtue; though the

difference is not of such a kind as the titles they have been usually distinguished by import. All the preparations of steel act by an astringent quality; that above denominated *astringent*, seems to have the least effect. They may be given in form of bolus, electary, or pill, from six grains to a scruple.

In some foreign pharmacopœias, the croci of iron are prepared from pure green vitriol. This strongly calcined (or the cocothar remaining after the distillation of oil of vitriol) is the astringent crocus: when less calcined, it is called *aperient*. These preparations differ little, if at all, from those above distinguished by the same appellations; and accordingly the Edinburgh College has now allowed the substitution of colcothar of vitriol to both the croci.

MARS SOLUBILIS, seu CHALYBS TARTARIZATUS.

Soluble, or tartarized steel.

Edinb. +

Mix equal parts of iron filings and crystals of tartar with as much water as is sufficient to reduce them into a mass: this mass is to be dried in a sand-heat; then powdered, moistened, and dried again; and this process repeated, till such time as the matter will easily grind into an impalpable powder.

THIS is an elegant and useful preparation of steel, and will in many cases take effect after all the foregoing ones have failed; the salt here joined rendering the metal sufficiently soluble in the animal fluids. It may be given either in a liquid form, or in that of a bolus, &c. in doses of four or five grains, or half a scruple. Dr Willis is said to have been the inventor of this prepara-

tion, and by his name it has been usually distinguished in the shops. The chemists have received another method of preparing iron with tartar; which is as follows.

MARS SOLUBILIS ALCALIZATUS.

Alkalized soluble steel.

Take equal quantities of filings of iron and of white tartar. Grind them together, and put them into a crucible, which is to be set in a fire strong enough to make the materials red hot; in this state let them continue for some time. When grown cold, powder the matter in a mortar; and the part which will not pass thro' a fine sieve, heat and pulverise again; repeating this until the whole be passed through. Mix the several siftings together, and keep them in a vessel close stop't from the air.

THIS preparation is soluble like the foregoing. Exposed to the air, it deliquesces like alkaline salts; and therefore it is not to be prescribed in any dry form. It is very rarely made use of.

FLORES MARTIALES.

Martial flowers.

Lond.

Take of

Colcothor of green vitriol washed, or filings of iron, one pound;
Sal ammoniac, two pounds.

Mix and sublime in a retort. Grind the flowers with the matter which remains in the bottom of the retort, and repeat the sublimation until the flowers arise of a beautiful yellowish colour.

To the residuum you may add half a pound of fresh sal ammoniac, and sublime as before; repeating this as long as the flowers arise well coloured.

THE

FLORES MARTIALES, vulgo
ENS VENERIS.

*Martial flowers, commonly called
Ens veneris.*
Edinb.

Take of

Colcothar of martial vitriol,
washed and well dried,

Sal ammoniac, equal weights.

Having mixed them well, sublime.

THE name of *Ens veneris* has by some been very improperly applied to this preparation, as it contains not a particle of copper. The proper *ens veneris* is prepared from the blue vitriol; but, as we shall soon see, is often not materially different from the *Flores martiales*.

The success of this process depends principally upon the fire being hastily raised, that the sal ammoniac may not sublime before the heat is become strong enough to enable it to carry up a sufficient quantity of the iron. Hence glass vessels are not so proper as earthen or iron ones: for when the former are made use of, the fire cannot be raised quick enough, without endangering the breaking of them. The most convenient vessel is an iron pot: to which may be luted an inverted earthen jar, having a small hole in its bottom to suffer the elastic vapours, which arise during the operation, to escape. It is of advantage to thoroughly mix the ingredients together, moisten them with a little water, and then gently dry them; and to repeat the pulverisation, humectation, and exsiccation two or three times, or oftener. If this method is followed, the sal ammoniac may be increased to three times the quantity of the iron, or farther; and a single sublimation will oftentimes be sufficient to raise flowers of a very deep orange colour.

This preparation is supposed to be highly aperient and attenuating; though no otherwise so than the rest of the chalybeates, or at most only by virtue of the saline matter joined to the iron. It has been found of good service in hysterical and hypochondriacal cases, and in distempers proceeding from a laxity and weakness of the solids, as the rickets. It may be conveniently taken in the form of a bolus, from two or three grains to ten: it is nauseous in a liquid form (unless in spirituous tincture); and occasions pills to swell and crumble, except such as are made of the gums.

LIXIVIUM MARTIS.

Ley of iron,

Lond.

Let the matter which remains after the sublimation of the martial flowers, be set by in a moist place; it will run into a liquor, which is to be kept for use.

THIS liquor seems greatly to resemble a saturated solution of iron made in spirit of salt: its taste is highly astringent, and somewhat sweetish. It may be given in doses of a drop or two in any convenient vehicle, for the same intentions as the other chalybeates. It is called by some of the chemical writers, *Oleum martis per deliquium*, and *Essentia martis*.

SAL MARTIS.

Salt of steel.

Lond.

Take of

Strong spirit of oil of vitriol,
eight ounces;

Iron filings, four ounces;

Water, two pints.

Mix them together; and after the ebullition ceases, let the mixture stand for some time upon warm

K k 3 sand:

sand: then pour off and filtre the liquor; and after proper exhalation set it by to crySTALLISE.

VITRIOLUM MARTIS, seu SAL CHALYBIS.

*Vitriol of iron, or salt of steel.
Edinb.*

‘Take of

Purified filings of iron, six ounces;

Vitriolic acid, eight ounces;

Water, two pounds and a half.

Mix them, and when the effervescence ceases let the mixture stand for some time upon warm sand; then strain the liquor through paper, and after due evaporation set it by to crySTALLISE.’

DURING the dissolution of the iron an elastic vapour arises, which on the approach of flame catches fire and explodes, so as sometimes to burst the vessel. To this particular therefore the operator ought to have due regard.

‘This vapour is also noxious to animal life. It is the inflammable air of Dr Priestley.’

The chemists are seldom at the trouble of preparing this salt according to the directions above given; but in its stead substitute common green vitriol, purified by solution in water, filtration, and crySTALLISATION. The only difference betwixt the two is, that the common vitriol contains somewhat more metal in proportion to the acid: and hence in keeping, its green colour is much sooner debased by a rusty brownish cast. The superfluous quantity of metal may be easily separated, by suffering the solution of the vitriol to stand for some time in a cold place, when a brownish yellow ochery sediment will fall to the bottom; or it may be perfectly dissolved, and kept suspended by a suitable addition of oil of vitriol.

If the vitriol is suspected to contain any cupreous matter (which it does not appear that the common English vitriol ever does, though almost all the foreign vitriols do), the addition of some bright iron wire to the solution will both discover, and effectually separate, that metal: for the acid quits the copper to dissolve a proportionable quantity of the iron; and the copper, in its separation from the acid, adheres to the undissolved iron, and forms a skin of a true copper colour upon its surface. Even a vitriol of pure copper may, on this principle, be converted into a pure vitriol of iron.

But though the vitriolic acid appears in this operation to have so much stronger a disposition to unite with iron than with copper, that it totally rejects the latter upon presenting the former for it to act upon; the operator may, nevertheless, give a dangerous impregnation of copper to the purest and most saturated solution of iron in the vitriolic acid, by the use of copper vessels. If the martial solution be bailed in a copper vessel, it never fails to dissolve a part of the copper, distinguishable by its giving a cupreous stain to a piece of bright iron immersed in it. By the addition of the iron, the copper is separated; by boiling it again without iron, more of the copper is dissolved; and this may in like manner be separated by adding more iron.

The salt of steel is one of the most efficacious preparations of this metal; and not unfrequently made use of in cachectic and chlorotic cases, for exciting the uterine purgations, strengthening the tone of the viscera, and destroying worms. It may be conveniently taken in a liquid form, largely diluted with aqueous fluids: Boerhaave directs it to be dissolved in an hundred times its

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its quantity of water, and the solution to be taken in the dose of twelve ounces on an empty stomach, walking gently after it. Thus managed, he says, it opens the body, purges, proves diuretic, kills and expells worms, tinges the excrements black, or forms them into a matter like clay, strengthens the fibres, and thus cures many different distempers. The quantity of vitriol in the above dose of the solution, is fifty-seven

grains and a half; but in common practice, such large doses of this strong chalybeate are never ventured on. Four or five grains, and in many cases half a grain, are sufficient for the intentions in which chalybeate medicines are given. Very dilute solutions, as that of a grain of the salt in a pint of water, may be used as succedanea to the natural chalybeate waters, and will in many cases produce similar effects.

S E C T. IV.

PREPARATIONS OF COPPER.

COPPER is less easy of solution than iron; and in its metallic state, does not appear to be acted on by the animal fluids, or to have any considerable effect in the body. Dissolved, it proves externally an escharotic; internally, a violent purgative and emetic. Acids of every kind dissolve it, and likewise volatile alkalis. With the vegetable and marine acids, it forms a green solution; with the vitriolic acid and volatile alkalis a blue.

ÆS USTUM.

Let thin copper plates be stratified in a crucible with sulphur; and calcined with a strong fire until they become pulverable.

PREPARATIONS of this kind, made with sulphur, nitre, and common salt, or mixtures of these, or by calcining the copper without addition, have been sometimes used in external applications, for drying and cleansing ulcers, and preventing the growth of fungous flesh; and sometimes likewise internally. They are still retained in some foreign pharmacopœias, but have not for a long

time been taken notice of among us for any medicinal intention.

CRYSTALLI VENERIS.

Crystals of copper.

Dissolve pure copper in thrice its weight of aquafortis, adding the metal to the acid by little and little at a time. Evaporate the liquor by a gentle heat, till one half of it is wasted; then set the remainder in a cool place to crystallise: afterwards dry the crystals, and keep them in a vial close stopp'd from the air.

THESE crystals are strongly caustic, similar to the *Causticum lunare*; but are so much disposed to liquefy, that they are scarce ever made use of, and cannot easily be preserved.

TINCTURA VENERIS VOLATILIS.

Volatile tincture of copper.

Take of

Copper filings, one dram;

Spirit of sal. ammoniac, twelve drams.

Let them stand together in a close vessel, frequently shaking it until

K k 4 the

the liquor is tinged of a beautiful violet colour.

It is observable, that the colour of this liquor is variously modified by the different conditions of the copper, and the quantity of air admitted or excluded. If the vessel is close shut the colour entirely disappears, and on taking out the cork is reproduced.

THIS tincture, or solution of copper, has been given internally, in the dose of a few drops, as a diuretic. Boerhaave directs at first three drops to be taken in a morning fasting with a glass of mead, and this dose to be daily doubled till it comes to twenty-four drops; which last quantity is to be continued for some days. He says, that by this means, he cured an hydropic person labouring under a confirmed ascites; and that the medicine procured surprising discharges of urine; that nevertheless, on trying it in another case of the same kind, it did not answer. See the article CUPRUM, page 133.

CUPRUM AMMONIACUM.

Ammoniacal copper.

Edinb.

Take of

Purest blue vitriol, two parts;

Volatile alkali of sal ammoniac, three parts.

Rub them briskly in a glass mortar till, the effervescence being finished, they run calmly into a violet-coloured mass, which is to be rolled up in a piece of bibulous paper, and exsiccated, first upon a chalk-stone, and afterwards with a gentle heat. The mass is next to be put up for use in a close phial.

In this process the copper is disengaged from the vitriolic acid in a calciform state, and more readily acted upon by the volatile alkali.

The quantity of alkali, which is superabundant to the neutralization of the vitriolic acid, is also sufficient to take up the whole of the calx: But it is probable, that part of the calx is really combined with the united alkali and acid. We might therefore consider the cuprum ammoniacum as a combination of copper with a kind of vitriolic ammoniac; the alkali of which is very much predominant.

The retained acid, we allege, must answer two useful purposes: the first is to render the alkali somewhat more fixed, and thereby less liable to exhalation on keeping; and secondly, by uniting in part with the whole of the alkali, the acrimony of this last may be thereby rendered less considerable.

The cuprum ammoniacum has of late years been much celebrated as a tonic remedy in epilepsy, and in several spasmodic and convulsive affections. The dose is gradually increased from one grain to four or five in the day. It is most conveniently taken in the form of the *Pilule e cupro*, (which see.) But as epilepsy, and various similar diseases, are not always to be treated with tonic remedies; so the cuprum ammoniacum has been blamed by some people, who are not pleased because it is fallible; and by others who have been unhappy in not properly distinguishing the cases in which it is alone admissible. It is undoubtedly a powerful tonic, and as such may be used with advantage in a variety of affections. There is, however, an inconvenience attending it; that it produces different effects on different stomachs: Thus it is, that some patients shall bear four grains without the least nausea, whilst others cannot take half a grain without severe vomiting. This, I apprehend, is to be explained, in part, from differences in the quantity and

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condition of the acid in the stomachs of different persons.'

ENS VENERIS.

Edinb. +

Take of

Colcothar of blue vitriol welledulcorated with water, and afterwards dried,

Sal ammoniac, of each equal parts.

Reduce them separately into powder; then mix, and put them into an earthen cucurbit, so as to fill two-thirds thereof. Place the cucurbit in an open fire; and having adapted to it a glass blind-head, apply at first a gentle heat, which is to be increased by degrees, and continued as long as the flowers arise of a yellow colour inclining to red: when the vessels are grown cold, let the flowers be carefully swept out with a feather.

If the blue vitriol be perfectly good, this process will not succeed in the manner here set down: where it does succeed, that is, where the flowers prove of a reddish yellow colour (*ex luteo rubentes*), it is to be presumed, that the success is owing to the vitriol partaking largely of iron, and that the preparation is not different from the *Flores martiales* of the preceding section. The colour of blue vitriol is undoubtedly owing to copper; but most of the common vitriols of this kind contain also no inconsiderable quantity of iron; and a reddish yellow colour of the flowers may be looked upon as a mark, that it is chiefly or solely the iron that the sal ammoniac has carried up. For this is the colour which iron always gives in its sublimates with sal ammoniac; whereas copper, in all its solutions, or soluble combinations with sal ammoniac, or other saline bodies,

gives a blue or green, or a colour compounded of these two.

The process is originally taken from Mr Boyle; who tells us, that he and a chemist, endeavouring to imitate Butler's stone by a preparation of calcined vitriol, and finding the medicine upon trial, though far short of what Helmont ascribes to his, yet no ordinary one, they called it, for the mineral's sake it was made of, *Ens primum veneris*.

The composition of vitriols was at that time but imperfectly known; and this is not the only instance of an effect being ascribed to the cupreous part of a vitriol, which was owing to the ferrugineous. Though Boyle looked on the preparation as proceeding from copper, and accordingly directs a good venereal vitriol to be used; yet, in the Gossarian and Dantzick vitriol, which he recommends as being very fit for the purpose, iron is the prevailing metal, the quantity of copper being very inconsiderable; and it appears from his own words, that sometimes, at least, he used the English vitriol, which is scarcely ever found to contain any metallic matter besides iron. The yellow or reddish colour which he ascribes to his sublimate, and its property of turning to an inky blackness with infusion of galls, are marks of its having been truly a chalybeate preparation.

In the preceding edition of the London Pharmacopœia, agreeably to Boyle's opinion of the production of the sublimate, the process was inserted with blue vitriol; and those of Edinburgh and Paris followed the example. The London College, at the last revival of their book, have corrected this error, and ordered green vitriol, or filings of iron itself, to be used; but the mistake was still continued in the other pharmacopœias.

From good blue vitriol, or pure vitriol

vitriol of copper, the sublimate here required cannot be obtained: and although it may be prepared from the common blue vitriol of the shops, as I have on trial found that it may, yet it is surely imprudent to endanger impregnating the preparation with that noxious metal; more especially as pure vitriols of iron are procurable at a much cheaper rate than the others. Those mixed vi-

triols in which the copper greatly prevails, give first a green or blue cupreous sublimate, and afterwards a yellow or reddish ferrugineous one; and those in which iron abounds most, give first the ferrugineous, and afterwards the cupreous flowers: though possibly neither sublimate is entirely free from an admixture of the other.

S E C T. V.

PREPARATIONS OF LEAD.

L EAD readily melts in the fire, and calcines into a dusky powder; which, if the flame is reverberated on it, becomes at first yellow, then red, and at length melts into a vitreous mass. This metal dissolves easily in the nitrous acid, difficultly in the vitriolic, and in small quantity in the vegetable acids; it is also soluble in expressed oil, especially when calcined.

Lead and its calces, whilst undissolved, have no considerable effects as medicines. Dissolved in oils, they are supposed to be (when externally applied) anti-inflammatory and desiccative. Combined with vegetable acids, they are notably so; and taken internally, prove a powerful but dangerous styptic.

PLUMBUM USTUM.

Burnt lead.

Edinb. +

Melt lead with a gentle fire, and keep it continually stirring, with an iron spatula, till it changes into powder.

MINIUM.

Red lead.

Edinb. +

Let any quantity of lead be melted in an unglazed earthen vessel, and

kept stirring with an iron spatula, till it falls into a powder, at first blackish, afterwards yellow, and at length of a deep red colour; in which last state it is called minium; taking care not to raise the fire so high as to run the calx into a vitreous mass.

THE preparation of red-lead is so troublesome and tedious, as scarce ever to be attempted by the apothecary or chemist; nor indeed is this commodity expected to be made by them, the preparation of it being a distinct branch of business. The makers melt large quantities of lead at once, upon the bottom of a reverberatory furnace built for this purpose, and so contrived, that the flame acts upon a large surface of the metal, which is continually changed by the means of iron rakes drawn backwards and forwards, till the fluidity of the lead is destroyed; after which, the calx is only now and then turned. By barely stirring the calx, as above directed, in a vessel over the fire, it acquires no redness; the reverberation of flame upon the surface being absolutely necessary for this effect. It is said, that twenty pounds of lead gain, in this process, five pounds; and that the

the calx, being reduced into lead again, is found one pound less than the original weight of the metal.

These calces are employed in external applications, for abating inflammations, cleansing and healing ulcers, and the like. Their effects, however, are not very considerable; nor are they perhaps of much farther real use, than as they give consistence to the plaster, unguent, &c.

CERUSSA.

Cerusse, or white lead.

Edinb. +

Put some vinegar into the bottom of an earthen vessel, and suspend over the vinegar very thin plates of lead, in such a manner that the vapour which arises from the acid, may circulate about the plates. Set the containing vessel in the heat of horse-dung for three weeks; if at the end of this time the plates are not totally calcined, scrape off the white powder, and expose them again to the steam of vinegar, till all the lead is thus corroded into powder.

THE making of white lead also is become a trade by itself, and confined to a few persons, who have large conveniences for this purpose. The general method which they follow, is nearly the same with that above described. See the Philosophical Transactions, N^o 137.

In this preparation, the lead is so far opened by the acid, as to discover, when taken internally, the malignant quality of the metal; and to prove externally, when sprinkled on running sores, or ulcers, moderately cooling, drying, and astringent.

SACCHARUM SATURNI.

Sugar of lead.

Lond.

Boil cerusse with distilled vinegar, in a leaden vessel, until the vine-

gar becomes sufficiently sweet: then filter the vinegar through paper, and after due evaporation set it to crystallise.

SAL PLUMBI, vulgo SACCHARUM SATURNI.

Salt, commonly called Sugar, of lead.

Edinb.

Put any quantity of cerusse into a cucurbit, and pour upon it ten times its quantity of distilled vinegar. Let the mixture stand upon warm sand till the vinegar becomes sweet; when it is to be poured off, and fresh vinegar poured on as often as it comes off sweet. Then let all the liquor be evaporated in a glass vessel to the consistence of pretty thin honey, and set it by in a cold place, that crystals may be formed, which are to be afterwards dried in the shade. The remaining liquor is forthwith to be evaporated, that new crystals may be formed; the evaporation of the residuous liquor is to be repeated till no more crystals concrete.

CERUSSE (especially that sort called *flake lead*, which is not, like the others, subject to adulteration) is much preferable either to minium or litharge, for making the sugar of lead: for the corrosion, which it has already undergone from the steam of vinegar, disposes it to dissolve more readily. It should be finely powdered before the vinegar is put to it; and during the digestion, or boiling, every now and then stirred up with a wooden spatula, to promote its dissolution, and prevent its concreting into a hard mass at the bottom. The strong acid obtained from the *caput mortuum* of vinegar (see page 469.) may be employed for this process to better advantage than the weaker, though purer acid, above

above directed. If a small quantity of rectified spirit or wine be prudently added to the solution as soon as it is duly exhaled, and the mixture suffered to grow cold by slow degrees, the sugar will concrete into very large and transparent crystals, which are scarcely to be obtained by any other method.

‘ If the crystals are dried in sunshine, they acquire a blackish or livid colour. This seems to happen from the absorption of light and its conversion into phlogiston. If it is owing to the escape of pure air, why are the rays of the sun necessary to this discharge? On whatever principles we account for it, the fact is the same; that the crystals soon lose their saline condition, and the lead gradually reassumes its metallic form. From this property of lead readily absorbing phlogiston, or parting with pure air, a solution of the *saccharum saturni* becomes a very convenient sympathetic ink; on the same grounds it is also used for a more important purpose. As lead communicates a sweetness and astringency very similar to the product of the vinous fermentation, a practice formerly prevailed among fraudulent dealers, of correcting the too great sharpness of acid wines by adulterating them with this metal. The abuse may be detected in two different ways: a piece of paper may be wrote upon, or moistened, with the liquor to be examined, and then exposed to the vapours of liver of sulphur; the writ, or moistened paper, will become of a livid colour, and this will happen though two or three hundred leaves of a book were interposed between the paper and the vapours; by this method, then, we make a kind of sympathetic ink. But the best way of making the test is, to drop a small quantity of a solution of the liver of sulphur into the suspected liquor: if there is any

lead present, this addition will instantly occasion the precipitation of a livid or dark-coloured cloud.’

The sugar of lead is much more efficacious than the foregoing preparations, in the several intentions which they are applied to. Some have ventured upon it internally, in doses of a few grains, as a styptic, in hæmorrhagies, profuse colliquative sweats, feminal fluxes, the *fluor albus*, &c. nor has it failed their expectations. It very powerfully restrains the discharge; but almost as certainly as it does this, it occasions symptoms of another kind, often more dangerous than those removed by it, and sometimes fatal. Violent pains in the bowels or through the whole body, and obstinate constipations, sometimes immediately follow, especially if the dose has been considerable: cramps, tremors, and weakness of the nerves, generally, sooner or later, ensue.

Boerhaave is of opinion, that this preparation proves malignant only, in so far as its acid happens to be absorbed in the body; for in such case, he says, “ it returns again into cerusse, which is violently poisonous.” On this principle it would follow, that in habits where acidities abound, the sugar of lead would be innocent. But this is far from being the case. Lead and its preparations act in the body only in so far as they are combined with acid: cerusse possesses the qualities of the *saccharum* only in a low degree; and either of them freed from the acid, has little, if any effect at all. For the same reasons, the *saccharum saturni* is preferable to the pompous *extract* and *vegeto-mineral water* of Goulard, in which the lead is much less perfectly combined in a saline state. It is sometimes convenient to assist the solution of the *saccharum saturni* in water, by adding a portion of vinegar. The effects
of

of the external application of lead seems to differ from the strength of the solution: thus a very weak solution seems to diminish directly the action of the vessels, and is therefore more peculiarly proper in ac-

tive inflammations, as of the eyes; whereas a strong solution operates as a direct stimulant, and is therefore more successful in passive ophthalmia.

S E C T. VI.

PREPARATIONS OF TIN.

TIN easily melts in the fire, and calcines into a dusky powder; which, by a farther continuance of the heat, becomes white. A mass of tin heated till it is just ready to melt, proves extremely brittle, so as to fall in pieces from a blow, and by dextrous agitation into powder. Its proper menstruum is aqua regia; though the other mineral acids also may be made to dissolve it, and the vegetable ones in small quantity. It crystallises with the vegetable and vitriolic acids; but with the others, deliquesces.

The virtues of this metal are little known. It has been recommended as an antihysterical, antihæctic, &c. At present, it is chiefly used as an anthelmintic.

STANNUM PULVERATUM.

Powdered tin.

Lond.

Melt the tin, and pour it into a wooden box rubbed in the inside with chalk: then immediately let the box be nimbly shaken, and a part of the tin will fall into powder. The remainder is to be melted a second time, and treated in same manner, till the whole of the metal is thus reduced into powder.

THIS preparation has been used for some time as a remedy against worms, particularly the flat kinds, which too often elude the force of

other medicines. The general dose is from a scruple to a dram; some confine it to a few grains. But Dr Alston assures us, in the Edinburgh Essays, that its success chiefly depends upon its being given in much larger quantities: he gives an ounce of the powder on an empty stomach, mixed with four ounces of molasses; next day, half an ounce; and the day following, half an ounce more: after which, a cathartic is administered: he says the worms are usually voided during the operation of the purge, but that pains of the stomach occasioned by them are removed almost immediately upon taking the first dose of the tin.

CALX JOVIS.

Calx of tin.

Edinb. +

Melt any quantity of tin in an unglazed earthen vessel, and keep it continually stirring with an iron spatula until it falls into a calx.

THIS process is not here intended to be carried so far as the pharmaceutical writers in general direct; it must be discontinued as soon as the metal is reduced into a dusky powder: if calcined to whiteness, the following operation would not well succeed. As to the virtues of the calx, they do not seem to be greatly different from those of the foregoing preparation.

SAL

SAL JOVIS.

*Salt of tin.**Edinb. +*

Take one pound of the foregoing calx of tin; and four ounces of aqua regia, diluted with six times its quantity of spring water. Digest them together in a sand-heat for two days: then shake the vessel; and after the more ponderous parts of the calx have subsided, pour off the turbid liquor, and evaporate it almost to dryness: the further exsiccation of the matter is to be performed on bibulous paper. On the calx which is left, pour half as much of the dissolvent as was employed at first; and proceed in the same manner as before.

In former editions, the menstruum, after digestion upon the calx of tin, was ordered to be filtered, then evaporated till a pellicle appeared upon the surface, and set by to crystallise. But the crystallisation succeeded very ill; and such crystalline matter, as was with difficulty obtained, proved to be little other than a nitrous ammoniacal salt afforded by the aqua regia; for this menstruum does not dissolve, or dissolves only an inconsiderable quantity of, the calx of tin. The process is now rendered more practicable, by allowing the finer parts of the calx to be mixed with the liquor in an undissolved state, and the whole to be inspissated and exsiccated together. It is probable, however, that the preparation here intended, might be obtained in a manner still more commodious.

I cannot apprehend what advantage there is in calcining the tin. Tin, in its metallic state, dissolves freely in aqua regia, but calcination renders it almost indissoluble in that menstruum; the further it is calci-

ned, the more does it lose of its solubility. If tin and its calx were of equal solubility, it could scarcely be suspected that the solutions of the two would be different in quality; for the phlogiston, or inflammable principle, which fire expels from metals in their calcination, is equally extricated by acids in their dissolution. A salt of tin with aqua regia may therefore be more advantageously prepared in the following manner.

Let melted tin be poured in small streams into a vessel of cold water, that it may be reduced into grains. Drop these by little and little, as a grain at a time, into aqua regia, that the dissolution may go on slowly, without effervescence or the discharge of fumes. When the metal is no longer acted on, pour off the solution, and evaporate it in a sand-heat till a dry salt is left.

This preparation seems intended chiefly for external use, as a mild escharotic and detergent. It is not so corrosive as might be expected, nor much disposed to liquefy in the air, though it is not easily made to assume a crystalline form. A perfect crystalline salt may be obtained from tin by the vitriolic acid, in the following manner:

Take two ounces of tin, reduced into grains or filings; and five ounces of oil of vitriol. Put them into a wide-necked glass, in a sand-heat, and increase the fire till the liquid boils and evaporates, and the matter remains almost dry. Then remove the vessel from the fire, and when the saline residuum has concreted, add a proper quantity of water, which, by the assistance of a moderate heat, will

will dissolve nearly the whole. Filtre the solution, and after due evaporation let it to crystallise.

SALT of tin for internal use, has been commonly directed to be prepared with distilled vinegar; by digesting the vinegar on calcined tin, and then evaporating and crystallising. Several of the chemists have denied that any crystals would by this means be obtained, or that the distilled vinegar would dissolve any part of the calx: and indeed when the tin is but moderately calcined, as above directed, it does not appear that any solution happens.

There are two states in which tin is considerably acted upon by vegetable acids: its perfect metallic state, and that of a perfect calx. Plates of pure tin put into common vinegar, are in a few hours corroded; by degrees the liquor becomes quite opaque and turbid, and deposits great part of the corroded tin to the bottom in form of a whitish powder; but still retains a part exquisitely divided; for after standing for many days, and after passing through a filtre, so much remained suspended as to give a whitishness and opacity to the fluid. Acid juices of fruits, substituted to vinegar, exhibited the same phenomena. These experiments, though they do not show that the tin is thus sufficiently dissolved to afford a perfect crystalline salt, prove, nevertheless, what is of more importance to be known, that tin, or tinned vessels, however pure the tin be, will give a metalline impregnation to light vegetable acids suffered to stand in them for a few hours.

In order to the obtaining a perfect solution of tin for crystallisation, the metal must be highly calcined; for though its solution in mineral acids is prevented by calcination, it is otherwise in regard to the vege-

table. Some take the common calx of tin, and having spread it thinly over the bottom of a proper vessel, continue the calcination in a gentle heat, frequently stirring the powder, for three or four days, in a furnace where the air may pass freely over the surface. Others mix the common calx or filings of tin with twice their weight of nitre, and inject the mixture by degrees into a vessel strongly heated, over which are fitted a number of aludels, or earthen pots with holes in their bottoms: the lowermost of these vessels has a hole also in the side, through which the matter is thrown in: during the deslagration which happens on each injection, a part of the tin is volatilised, and adheres to the pots in form of a fine white powder, which is swept out and washed with water. Others obtain a calx of tin, perhaps not less perfect, more expeditiously, and with less trouble; by dissolving the metal in aqua regia, (which, as already observed, has in this respect nearly the same effect as fire), and afterwards recovering the calx, by diluting the solution with about four times its quantity of water, and gradually adding to it spirit of sal ammoniac till the effervescence ceases; a white curdly matter precipitates, which is to be washed with water and dried.

Take of calx of tin, prepared in either of the above methods, one pound; of distilled vinegar, one gallon. Digest them together, occasionally stirring up the matter from the bottom till the vinegar has acquired a rough sweetish taste: then evaporate the liquor to the consistence of a syrup, add to it about one-twentieth its weight of rectified spirit of wine, and suffer the heat slowly to decrease, that the salt may crystallise.

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THE crystals obtained by this method are hard, solid; colourless, transparent, void of acrimony. They have been recommended in the dose of a few grains, in uterine disorders: but it does not appear that experience has warranted the virtues attributed to them; nor are any of these salts at present made use of in common practice, or kept in the shops.

The powder precipitated from aqua regis, either by volatile alkalis, or by water alone, is sometimes employed as a cosmetic, under the name of *MAGISTERY OF TIN*. A whiter, and more elegant, preparation of this kind might be obtained, by dissolving the metal in the vitriolic acid, and precipitating with volatile spirits.

‘The whole of these preparations are entirely rejected from modern practice. A solution of tin in aqua regia, prepared in nearly the same manner as here directed, is much used by the dyers for heightening the colour of cochineal, gum lac, &c. for the purpose of producing a fine scarlet colour.’

AURUM MUSIVUM.

Mosaic gold.

Lond.

Take of

Tin, one pound,
Flowers of sulphur, seven ounces;
Sal ammoniac,
Purified quicksilver, of each half a pound.

Melt the tin by itself, add to it the quicksilver, and when the mixture is grown cold, reduce it into powder: mix this with the sulphur and sal ammoniac, and sublime in a matrafs; the mosaic gold will be found under the sublimed matter, with some dross at the bottom.

THE management of this process,

so as to give to the preparation the beautiful colour and appearance for which it is admired, has been held as a secret. The chemists seem greatly divided as to the proportions which the ingredients ought to bear to each other, and in this some make the chief difficulty to consist; while others make the due regulation of the fire to be the principal point. There does not however appear to be any very great nicety in either respect. I have found the process to succeed equally with very different proportions of the materials, by mixing them thoroughly together; putting them into a wide-necked matrafs upon a little sand in an iron pot; applying a gentle fire for some time, till the white fumes, which arose copiously at first, and passed out at the neck of the glass, begun to abate; then gradually increasing the fire till the sand became red-hot, and keeping it up in this state for a considerable while, according to the quantity of the mixture.

The mosaic gold is chiefly valued, and receives its name from its sparkling gold-like hue. As a medicine, it is at present little regarded; tho' formerly held in considerable esteem, in hysterical and hypochondriacal complaints, malignant fevers, and venereal disorders. In these last it has been recommended, from a supposition of its being a mercurial; but on considering the circumstances of the process, and the phenomena that occur in it, there will appear little probability of any of the mercury being retained in the preparation.

The matrafs being broken when the process is finished, the mosaic gold is found in the bottom; and the sublimed substance, above it, consists partly of sal ammoniac, partly of sulphur, and partly of a cinnabar resulting from the combination of part of the sulphur and mercury.

The aurum mosaicum is found to weigh more than the tin employed; but pure tin, in being calcined by itself, gains very nearly as much as it does in this process: the golden colour is probably owing to a minute portion of sulphur adhering to the tin. On roasting the aurum over a gentle fire, it smokes a little, and soon changes its golden hue to a dirty-coloured one, not unlike that of tin lightly calcined: being then

mixed with a proper flux, and melted in a crucible, it yields a lump of tin not far short of the original weight of the metal.

The College of Edinburgh, tho' they formerly divided this preparation into two processes, one for amalgamating the tin with the mercury, the other for the sublimation with the sulphur and sal ammoniac, have in a later edition entirely rejected it.

S E C T. VII.

PREPARATIONS OF MERCURY.

MERCURY, or quicksilver, is a ponderous metallic fluid, totally volatile in a strong fire, and calcinable by a weaker one (though very difficultly) into a red powdery substance. It dissolves in the nitrous acid, is corroded by the vitriolic, but not acted on by the marine in its liquid state: it nevertheless may be combined with this last, if skillfully applied in the form of fume. Quicksilver unites, by trituration, with earthy, unctuous, resinous, and other like substances, so as to lose its fluidity: triturated with sulphur, it forms a black mass, which by sublimation changes into a beautiful red one.

The general virtues of the mercurial preparations are, 'to communicate a considerable and very general stimulus to the system;' by this means they prove eminently serviceable in certain inveterate chronic disorders, proceeding from obstinate obstructions of the glands. Crude mercury has no effect this way. Resolved into fume, or divided into minute particles, and prevented from reuniting by the interposition of other substances, it operates very powerfully; unless the dividing body be sulphur, which re-

strains its action. Combined with a small quantity of the mineral acids, it acts effectually, though in general mildly; with a larger, it proves violently corrosive.

ARGENTI VIVI PURIFICATIO.

Purification of quicksilver.

L. E. +

Distil quicksilver in a retort; and afterwards wash it with water and common salt, or with vinegar.

If a glass retort is made use of for this operation, it ought to have a low body and a long neck; and the neck should be considerably inclined downwards, so as to allow the elevated mercury a quick descent: the receiver should be filled almost to the neck of the retort with water; the use of this is not to condense, but to cool, the distilling quicksilver, lest falling hot upon the bottom, it should crack the glass. The distillation may be more conveniently performed in an iron retort, or an iron pot fitted with a head.

The fire should be raised no higher than is sufficient to elevate the mercury; for certain mineral substances,

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stances, which are said to be sometimes mixed with it, prove in part volatile in a degree of heat not much greater than that in which mercury distills. Mr Boyle relates, that he has known quicksilver carry up with it a portion even of lead, so as to have its weight very sensibly increased thereby; and this happened though only a moderate fire was used. 'It is therefore very uncertain whether any advantage is really gained by this process; and the Edinburgh College have expunged it from their book.'

MERCURIUS ALKALIZATUS.

Alkalised mercury.

Take of

Pure quicksilver, three drams;

Prepared crabs-eyes, five drams.

Grind them together in a glass mortar till the mercurial globules disappear.

THIS preparation, which has never been received into the London Pharmacopœia, and is now rejected from the Edinburgh, is inserted here on account of its being now and then called for, and held by some in considerable esteem. It has never come much into common practice, the labour of making it having been a temptation to a grievous abuse in its preparation, viz. the addition of an intermedium, which facilitates the union of the mercury with the crabs-eyes, but greatly abates its medical powers. The medicine, when duly prepared, is an useful alterative; and may be given, in cutaneous or venereal cases, from two or three grains to a scruple.

MERCURIUS SACCHARATUS.

Sugared mercury.

Edinb.

Take of

Pure quicksilver,

Brown sugar-candy, of each half an ounce;

Essential oil of juniper berries, sixteen drops.

Grind them together in a glass mortar until the mercury ceases to appear.

THE essential oil, here added, is said to be a very useful ingredient; not only promoting the extinction of the quicksilver (which, however, is still not a little difficult and tedious), but likewise improving the medicine. The intention, in this and the foregoing process, is only to divide the mercury by the interposition of other bodies; for when thus managed (as already observed), it has very powerful effects; though, whilst undivided, it seems to be altogether inactive. Sugar alone apparently answers this intention; but on the commixture of aqueous fluids, the sugar dissolves by itself, leaving the mercury to run together again in its original form: the addition of the oil is said in great measure to prevent this inconvenience. The dose of this medicine, as an alterative, is from two or three grains to a scruple. 'Both of them may be very well spared from the shops.'

ÆTHIOPS MINERALIS.

Ethiops mineral.

Lond.

Take of

Purified quicksilver,

Flowers of sulphur, unwashed, of each equal weights.

Grind them together, in a glass or stone mortar, until they are united.

Edinb.

Take of

Quicksilver,

Flowers of sulphur, each equal weights.

Grind them together in a glass mortar,

tar, with a glass pestle, till the mercurial globules totally disappear.

An ethiops is made also with a double quantity of mercury.

THE union of the mercury and sulphur might be greatly facilitated by the assistance of a little warmth. Some are accustomed to make this preparation in a very expeditious manner, by melting the sulphur in an iron ladle, then adding the quicksilver, and stirring them together till the mixture is completed. The small degree of heat here sufficient, cannot reasonably be supposed to do any injury to substances which have already undergone much greater fires, not only in the extraction from their ores, but likewise in the purifications of them directed in the pharmacopœia. In the following process, they are exposed in conjunction to a strong fire, without suspicion of the compound receiving any ill quality from it. Thus much is certain, that the ingredients are more perfectly united by heat, than by the degree of triture usually bestowed upon them. From the ethiops prepared by triture, part of the mercury is apt to be spued out on making it into an electary or pills; from that made by fire, no separation is observed to happen.

Ethiops mineral is one of the most inactive of the mercurial preparations. Some practitioners have boldly asserted its possessing extraordinary virtues; and most people imagine it a medicine of some efficacy. But what benefit is to be expected from it in the common doses of eight or ten grains, or a scruple, may be judged from hence, that it has been taken in doses of several drams, and continued for a considerable time, without producing any remarkable effect. Sulphur eminently abates

the power of all the more active minerals, and seems to be at the same time restrained by them from operating in the body itself. Boerhaave, who is in general sufficiently liberal in the commendation of medicines, disapproves the ethiops in very strong terms. "It cannot enter the absorbed vessels, the lacteals, or lymphatics; but passes directly through the intestinal tube, where it may happen to destroy worms, if it operates luckily. They are deceived who expect any other effects from it; at least I myself could never find them. I am afraid it is unwarily given, in such large quantities, to children and persons of tender constitutions, as being a foreign mass, unconquerable by the body, the more to be suspected, as it there continues long sluggish and inactive. It does not raise a salivation, because it cannot come into the blood. Who knows the effects of a substance, which, so long as it remains compounded, seems no more active than any ponderous insipid earth?" The ethiops, with a double proportion of mercury, now received into the Edinburgh Pharmacopœia, has a greater chance for operating as a mercurial; and probably the quantity of mercury might be still further increased to advantage.

CINNABARIS FACTITIA.

Artificial cinnabar.

Lond.

Take of

Purified quicksilver, twenty-five ounces;

Sulphur, seven ounces.

Melt the sulphur, and mix into it the quicksilver; if the mixture happens to catch flame, extinguish it by covering the vessel. The matter is afterwards to be reduced into powder, and sublimed.

L 1 2

Edinb.

Edinb. +

Take of Purified quicksilver, three pounds and a half;

Flowers of sulphur, washed, one pound.

Melt the sulphur in a large iron vessel over a gentle fire, and add to it by degrees the quicksilver previously heated, stirring them constantly together with an iron spatula, that they may be perfectly mixed. Immediately fit upon the vessel a wooden cover, to prevent the mixture from taking fire: before the matter is grown cold, grind it into powder, and sublime according to art.

It has been customary to order a larger quantity of sulphur than here directed: but these smaller proportions answer better; for the less sulphur, the finer coloured is the cinnabar.

As soon as the mercury and sulphur begin to unite, a considerable explosion frequently happens, and the mixture is very apt to take fire, especially if the process is somewhat hastily conducted. This accident the operator will have previous notice of, from the matter swelling up, and growing suddenly consistent: as soon as this happens, the vessel must be immediately close covered.

During the sublimation, care must be had that the matter rise not into the neck of the vessel, so as to block up and burst the glass: to prevent this, a wide-necked bolt-head, or rather an oval earthen jar, coated, should be chosen for the subliming vessel. If the former is employed, it will be convenient to introduce, at times, an iron wire, somewhat heated, in order to be the better assured that the passage is not blocking up; the danger of which

may be prevented, by cautiously raising the vessel higher from the fire.

If the ingredients were pure, no feces will remain: in such case, the sublimation may be known to be over, by introducing a wire as before, and feeling therewith the bottom of the vessel, which will then be perfectly smooth: if any roughness or inequalities are perceived, either the mixture was impure, or the sublimation is not completed; if the latter be the case, the wire will soon be covered over with the rising cinnabar.

The preparers of cinnabar in large quantity, employ earthen jars, which in shape pretty much resemble an egg. These are of different sizes, according to the quantity intended to be made at one sublimation, which sometimes amounts to two hundred weight. The jar is usually coated from the small end almost to the middle, to prevent its breaking from the vehemence or irregularity of the fire. The greater part, which is placed uppermost, not being received within the furnace, has no occasion for this defence. The whole secret, with regard to this process, is (1) the management of the fire, which should be so strong as to keep the matter continually subliming to the upper part of the jar, without coming out at its mouth, which is covered with an iron plate; (2) to put into the subliming vessel only small quantities of the mixture at a time.

A method is mentioned in the Practical Chemistry of making cinnabar without sublimation, by agitating or digesting mercury in the volatile tincture of sulphur, already described. I have found a sulphureous liquor more easily preparable to have a like effect: the solution for *lac sulphuris* will, with some address, succeed.

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The principal use of cinnabar is as a pigment. It was formerly held in great esteem as a medicine in cutaneous foulnesses, gouty and rheumatic pains, epileptic cases, &c. but of late it has lost much of its reputation. It appears to be nearly similar to the *ethiops* already spoken of. Cartheuser relates, that having given cinnabar in large quantities to a dog, it produced no sensible effect, but was partly voided along with the feces unaltered, and partly found entire in the stomach and intestines upon opening the animal. The celebrated Frederick Hoffman, after bestowing high encomiums on this preparation, as having, in many instances within his own knowledge, perfectly cured epilepsies and vertiges from contusions of the head (where it is probable, however, that the cure did not so much depend upon the cinnabar, as on the spontaneous recovery of the parts from the external injury), observes, that the large repeated doses, necessary for having any effect, can be borne only where the first passages are strong; and that if the fibres of the stomach and intestines are lax and flaccid, the cinnabar, accumulated and concreting with the mucous matter of the parts, occasions great oppression; which seems to be an acknowledgment that the cinnabar is not subdued by the powers of digestion, and has no proper medicinal activity. There are indeed some instances of the daily use of cinnabar having brought on a salivation; perhaps from the cinnabar, made use of in those cases, having contained a less proportion of sulphur than the sorts commonly met with. The regulus of antimony, and even white arsenic, when combined with a certain quantity of common sulphur, seem to have their deleterious power destroyed: on separating more and

more of the sulphur, they exert more and more of their proper virulence. It does not seem unreasonable to presume, that mercury may have its activity varied in like manner; that when perfectly satiated with sulphur, it may be inert; and that when the quantity of sulphur is more and more lessened, the compound may have greater and greater degrees of the proper efficacy of mercurials.

Cinnabar is sometimes used in fumigations against venereal ulcers in the nose, mouth, and throat. Half a dram of it burnt, the fume being imbibed with the breath, has occasioned a violent salivation. This effect is by no means owing to the medicine as cinnabar: when set on fire, it is no longer a mixture of mercury and sulphur; but mercury resolved into fume, and blended in part with the volatile vitriolic acid; in either of which circumstances, this mineral, as already observed, has very powerful effects.

MERCURIUS CALCINATUS.

Calcined mercury.

Lond.

Put purified quicksilver into a broad-bottomed glass vessel, having a small hole open to the air; and keep it in a constant heat, in a sand-furnace, for several months, until it is calcined into a red powder.

THIS very tedious process might, in all probability, be greatly expedited, by employing, instead of a vessel with a small aperture, a very wide-mouthed, flat-bottomed glass body, of such a height that the mercury may not escape: by this means, the air, which is essentially necessary to the calcination of all metallic substances, will be more freely ad-

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mitted.

mitted. A vessel might be so contrived, as to occasion a continual flux of air over the surface of the mercury.

This preparation is by some highly esteemed in venereal cases, and supposed to be the most efficacious and certain of all the mercurials. It may be advantageously given in conjunction with opiates: a bolus or pill, containing from half a grain to two grains of this calx, and a quarter or half a grain or more of opium, with the addition of some warm aromatic ingredient, may be taken every night. Thus managed, it acts mildly, though powerfully, as an alterative and diaphoretic: given by itself in larger doses, as four or five grains, it proves a rough emetic and cathartic.

MERCURII SOLUTIO.

Solution of mercury.

Edinb. +

Take equal quantities of pure quicksilver and double aquafortis. Digest them together, in a phial placed in a sand-furnace, that a limpid solution may be made.

AQUAFORTIS dissolves mercury more easily, and in larger quantity, than any other acid: sixteen ounces, if the menstruum is very strong and pure, will take up eleven or twelve. As the liquor grows cold, a considerable part concretes, at the bottom of the vessel, into a crystalline form. If the whole is wanted to remain suspended, a proper quantity of water should be added after the solution is completed.

This process is given only as preparatory to some of the following ones. The solution is highly caustic, so as scarce to be safely touched. It stains the skin purple or black.

CALX MERCURII.

Calx of mercury.

Edinb. +

Take any quantity of the solution of mercury, and evaporate it over a gentle fire till a white dry mass remains.

THIS calx, or rather salt, of mercury, is violently corrosive. It is rarely made use of any otherwise than for making the following preparation and the corrosive sublimate.

MERCURIUS CALCINATUS, vulgo

PRÆCIPITATUS RUBER.

Red calx of mercury, commonly called Red precipitate.

Edinb.

Take any quantity of the calx of mercury, and reverberate it in a crucible, with successive degrees of heat. Its white colour will change first into a brown, and afterwards a yellow; at length, upon increasing the fire, it passes into a deep red.

MERCURIUS CORROSIVUS RUBER.

The red mercurial corrosive.

Lond.

Take of

Purified quicksilver,

Compound aquafortis, described in page 467, of each equal weights.

Mix, and set them in a broad-bottomed vessel, in a sand-heat, till all the humidity is exhaled, and the mass has acquired a red colour.

THE marine acid in the compound menstruum, ordered in this last process, disposes the mercurial calx to assume the bright sparkling look admired in it; which, though perhaps no advantage to it as a medicine,

dicine, ought nevertheless to be insisted on by the buyer as a mark of its goodness and strength. As soon as the matter has gained this appearance, it should be immediately removed from the fire, otherwise it will soon lose it again. The preparation of this red precipitate, as it is called, in perfection, is supposed by some to be a secret not known to our chemists; insomuch that we are under a necessity of importing it from abroad. This reflection seems to be founded on misinformation; we sometimes indeed receive considerable quantities from Holland; but this depends upon the ingredients being commonly cheaper there than with us, and not upon any secret in the manner of the preparation.

This precipitate is, as its title imports, an escharotic, and in this intention is frequently employed by the surgeons, with basilicum, and other dressings, for consuming fungous flesh in ulcers, and the like purposes. It is subject to great uncertainty in point of strength; more or less of the acid exhaling, according to the degree and continuance of the fire. The best criterion of its strength, as already observed, is its brilliant appearance; which is also the mark of its genuineness: if mixed with minium, which it is sometimes said to be, the duller hue will discover the abuse. This admixture may be more certainly detected by means of fire: the mercurial part will totally evaporate, leaving the minium behind.

Some have ventured to give this medicine internally, in venereal, scrophulous, and other obstinate chronic disorders, in doses of two or three grains, and more. But certainly the milder mercurials, properly managed, are capable of answering all that can be expected from this; without occasioning violent

anxieties, tormina of the bowels, and other ill consequences, which the best management can scarcely prevent this corrosive preparation from sometimes doing. The chemists have contrived sundry methods of correcting and rendering it milder, by divesting it of a portion of the acid; but to no very good purpose, as they either leave the medicine still too corrosive, or render it similar to others which are parable at an easier rate.

MERCURIUS CORALLINUS.

Coralline mercury.

Lond.

Pour on the red mercurial corrosive about thrice its weight of rectified spirit of wine, and digest them together, with a gentle heat, for two or three days, frequently shaking the vessel; then set fire to the spirit, keeping the powder continually stirring till all the spirit is burnt away.

It is supposed, that all the more violent preparations of this kind, composed of metallic bodies united with acids, are rendered milder by digestion in spirit of wine: the acid being dulcified, or in part absorbed by the spirit. This evidently happens in some cases, where the proportion of acid is large, or sufficient to render the compound soluble in water; but that it happens equally in others, I cannot affirm. This much is certain, that the mercurius corallinus, whether from this cause, or barely from some of the acid being dissipated by the heat of the burning spirit, proves considerably milder than the corrosive was at first. It is still, however, a medicine of great activity, and seems to be scarce sufficiently safe for internal use: a few grains of it generally prove cathartic or emetic, and sometimes occasion violent symptoms.

ARCANUM CORALLINUM.

The coralline secret.

Take five ounces of the red mercurial corrosive, and eight ounces of spirit of nitre: distil off the spirit in a retort; return it with four ounces of fresh spirit of nitre upon the residuum, and draw it off again as before: repeat this process with four ounces of new spirit; and at last keep the fire up very strong for at least two hours. The powder, which remains in the retort, is to be put into a crucible, and kept of a worm-red heat for seven or eight minutes: then boil it for half an hour in three pints of pure water: distil from it twelve ounces of tartarified spirit of wine, cohobating the spirit twice: digest it for forty-eight hours in a sand-heat with the same quantity of fresh tartarified spirit; raising the fire towards the end, so as to make the spirit simmer a little: afterwards suffer the whole to cool, decant off the spirit, and dry the powder for use.

THIS preparation, notwithstanding its pompous name, is a very unthrifty and injudicious one. The cohobation of spirit of nitre upon the corrosive, answers no useful purpose; for whatever the acid communicates, is afterwards dissolved and separated by the water: if the direction of keeping up a strong fire for some time, after the last distillation, is not strictly complied with, all the mercury will dissolve in the water, and the solution will prove similar to the *solutio mercurii* above described.

PULVIS PRINCIPIS.

Prince's powder.

Grind eight ounces of the red mercurial corrosive into a fine powder; and digest it with two quarts

of water, in an almost boiling heat, for twelve hours, occasionally stirring up the powder from the bottom: then pour off the liquor, and digest the powder in a fresh parcel of water as before; repeating this process a third time. The last water being poured off, grind the powder with double its weight of fixt alkaline salt, and digest it as at first, in fresh waters, till it becomes insipid. Afterwards boil it in spirit of wine; and lastly, pouring off the spirit, dry the powder for use.

PANACEA MERCURII RUBRA.

Red panacea of mercury.

Digest the red mercurial corrosive with eight times its weight of water, for twenty-four hours, shaking the vessel three or four times: pour off the water, dry the powder, and digest it with eight times its weight of spirit of wine, for fifteen days. The spirit being then decanted off, burn upon the calx twice its weight of tincture of sulphur: afterwards digest it two or three days longer in fresh spirit of wine; and in the last place, exsiccate it for use.

THE three foregoing preparations have been kept in particular hands as secrets. At bottom they are all nearly the same, and much too trivial to deserve the pains taken about them. They are perhaps farther divested of acid than the *mercurius corallinus* of the shops; but have this disadvantage, that the quantity of acid separated in the troublesome digestions, &c. must vary according to different circumstances in the operation. All the four stand recommended in small doses, two grains for instance, as excellent alterants and diaphoretics: in larger ones, they prove emetic and cathartic.

MER.

**MERCURIUS CORROSIVUS
SUBLIMATUS, vel ALBUS.***The white mercurial corrosive, or
Corrosive mercury sublimate.**Lond.*

Take of

Purified quicksilver, forty ounces;
Sea-salt, thirty-three ounces;
Nitre, twenty-eight ounces;
Calcined green vitriol, sixty-six
ounces.

Grind the quicksilver, in a wooden
or stone mortar, with an ounce or
more of corrosive mercury sublimate
already made, until the
quicksilver is divided into small
grains: this mixture is to be
ground with the nitre, and after-
wards with the sea-salt; then add
the calcined vitriol, continuing
the triture only for a little time
longer, lest the quicksilver should
run together again. Lastly, pro-
ceed to sublimation, in a glass
matrass; to which you may adapt
a head, in order to save a little
spirit that will come over.

**MERCURIUS SUBLIMATUS
CORROSIVUS.***Sublimate corrosive mercury.**Edinb.*

Take of

Quicksilver,

Weak nitrous acid, of each four
ounces;

Calcined sea-salt,

Calcined vitriol, of each five
ounces.

Dissolve the quicksilver in the ni-
trous acid, and evaporate the so-
lution to a white and thoroughly
dry mass; then add the sea-salt
and vitriol. Having ground and
mixed them well together, put
the whole into a phial, one half
of which they ought to fill; then
sublime in sand, first with a gentle
heat, but afterwards to be gradu-
ally increased.

‘The sublimate prepared by ei-
ther of these methods is the same.’
It has been supposed, that corrosive
sublimate participates of all the in-
gredients employed in this process;
though it is certain, that it consists
only of mercury and the acid of the
sea-salt united together. The ma-
terials being mixed and exposed to
the fire, first the vitriol parts with
its acid; which, dislodging those of
the nitre and marine salt, takes their
place. The marine acid, resolved
into fume and assisted by the ni-
trous, dissolves the mercury now also
strongly heated. This acid, though
it very difficultly acts on mercury,
yet when thus once united with it,
is more strongly retained thereby
than any other acid. The nitrous
spirit, therefore, having nothing to
retain it (for its own basis, and that
of the sea-salt are both occupied by
the vitriolic; and that which the
vitriolic forsook to unite with these,
is now scarcely combinable with it)
arises; leaving the mercury and ma-
rine acid to sublime together when
the heat shall be strong enough to
elevate them. Some small portion
of the marine spirit arises along with
the nitrous; and hence this com-
pound acid has been usually employ-
ed, instead of the *aquafortis compo-
sita*, to which it is similar, for ma-
king the red corrosive.

It appears, therefore, that the vi-
triol, and the bases of the nitre and
sea-salt, are of no farther use in this
process, than as convenient inter-
mediums for facilitating the union
of the mercury with the marine a-
cids. They likewise serve to afford
a support for the sublimate to rest
upon, which thus assumes the form
it is expected in, that of a placenta
or cake. The design of adding a
little sublimate already made, is to
facilitate the extinction of the mer-
cury, or its mixture with the other
mate-

materials. 'But as this is a troublesome and uncertain process, it is certainly preferable to employ the mercurial nitre as directed in the Edinburgh Pharmacopœia.'

THERE are sundry other ways of making this preparation, or of combining mercury with the marine acid. If mercury, corroded by the vitriolic acid into a white mass (as for making the yellow mercurial emetic or turpeth mineral described hereafter), be mixed with an equal quantity of sea-salt and set to sublime; the vitriolic acid will quit the mercury to unite with the basis of the sea-salt; and the acid of the sea-salt, now set at liberty, will unite with the mercury, and sublime with it into the compound required. The discovery of this method is generally attributed to Boulduc; tho' it is found also in Kunckel's *Laboratorium Chymicum*. 'When the process is conducted in this way, the residuous matter is a pure Glauber's salt, and the sublimate is also free of ferruginous matter; a greater or less quantity of which is very generally carried up along with the mercury when vitriol of iron is employed. Boulduc's method has therefore the advantage in this, that the proportion of mercury in a given quantity of sublimate must be less liable to variation.'

If the mercury be corroded by the nitrous acid instead of the vitriolic, the event will be the same; that acid equally quitting the mercury, and setting loose the marine; and the sublimate made by this method is the same with the foregoing; but as the quantity of fixt matter is smaller, it more difficultly assumes the form of a cake. It requires indeed some skill in the operator, to give it this appearance when either process is followed. When large quantities are made, this form may

be easily obtained, by placing the matrafs no deeper in the sand than the surface of the matter contained in it; and removing a little of the sand from the sides of the glass, as soon as the flowers begin to appear in the neck; when the heat should likewise be somewhat lowered, and not at all raised during the whole process. The sublimation is known to be completed by the edges of the crystalline cake, which will form upon the surface of the caput mortuum, appearing smooth and even, and a little removed from it.

Our apothecaries rarely, and few even of the chemists, attempt the making of this preparation themselves; greatest part of what is used among us comes from Venice and Holland. This foreign sublimate has been reported to be adulterated with arsenic. Some affirm that this dangerous fraud may be discovered by the sublimate turning black on being moistened with alkaline ley; which by others is denied. As this point seemed of some importance to be determined, I made sundry experiments with this view, which convinced me of the insufficiency of alkaline ley, poured into a solution of pure sublimate, into a solution of pure arsenic, and into a mixture of the two solutions in different proportions, produced no blackness in any: and though the pure sublimate, and the mixtures of it with arsenic, exhibited some differences in these trials, yet these differences were neither so constant, nor so strongly marked, as to be laid down, universally, for criteria of the presence or absence of arsenic: different specimens of sublimate, known to be pure, differed considerably in this respect; probably from their holding a little more or less mercury in proportion to the acid, or from their retaining some small portion of those acids

acids which were employed in the preparation as intermedia.

Some chemists deny the practicability of this adulteration. There is a process common in books of chemistry, wherein sublimate and arsenic being mixed together and set to sublime, they do not arise in one mass, or yield any thing similar to the preparation here intended: the arsenic absorbs the acid of the sublimate, and is reduced thereby into a liquid or butyraceous consistence; while the mercury, thus freed from the acid, distils in its running form: if the quantity of arsenic is insufficient to decompose the whole of the sublimate, the remainder of the sublimate concretes distinct from the arsenical butter. From whence they conclude, that arsenic and sublimate cannot be united together into a crystalline cake, the form in which this preparation is brought to us.

The above experiment is not altogether decisive; for though arsenic and sulphur do not assume the required form by the common process, it is possible they may by some other management. It will therefore (though I have never found any reason to suspect that the abuse is practised) be proper to point out means for the satisfaction of those who may be desirous of convincing themselves of the genuineness of this important preparation. Let some of the sublimate, powdered in a glass mortar, be well mixed with twice its weight of black flux, (page 557.) and a little filings or shavings of iron: put the mixture into a crucible capable of holding four or five times as much; give a gradual fire till the ebullition ceases, and then hastily increase it to a white heat. If no fumes of a garlic smell can be perceived during the process; and if the particles of iron retain their form, without any of them being

melted; I think we may be secure that the mixture contained no arsenic.

SUBLIMATE is a most violent corrosive, presently corrupting and destroying all the parts of the body it touches. A solution of it in water, in the proportion of about a dram to a quart, is made use of for keeping down proud flesh, and cleansing foul ulcers; and a more dilute solution as a cosmetic, and for destroying cutaneous insects. But a great deal of caution is requisite even in these external uses of it.

Some have nevertheless ventured to give it internally, in the dose of one-tenth or one-eighth of a grain. Boerhaave relates, that if a grain of it be dissolved in an ounce or more of water, and a dram of this solution, softened with syrup of violets, taken twice or thrice a-day, it will perform wonders in many reputed incurable distempers; but particularly cautions us not to venture upon it, unless the method of managing it is well known.

Sublimate dissolved in vinous spirits has of late been given internally in larger doses; from a quarter of a grain to half a grain. This method of using it was brought into vogue by baron Van Swieten at Vienna, particularly for venereal maladies; and several trials of it have been made in this kingdom also with success. Eight grains of the sublimate are dissolved in sixteen ounces of rectified spirit of wine or proof-spirit; the rectified spirit dissolves it more perfectly, and seems to make the medicine milder in its operation, than the proof-spirit of the original prescription of Van Swieten. Of this solution, from one to two spoonfuls, that is, from half an ounce to an ounce, are given twice a-day, and continued till all the symptoms are removed; observing to use a low diet,

diet, with plentiful dilution, otherwise the sublimate is apt to purge, and gripe severely. It generally purges more or less at the beginning, but afterwards seems to operate chiefly by urine and perspiration.

Sublimate consists of mercury united with a large quantity of marine acid. There are two general methods of destroying its corrosive quality, and rendering it mild; combining with it so much fresh mercury as the acid is capable of taking up, and separating a part of the acid by means of alkaline salts, and the like. On the first principle, mercurius dulcis is formed; on the latter, white precipitate. 'But before entering on these, it is proper to give the following formula.'

SOLUTIO MERCURII SUBLIMATI CORROSIVI.

Solution of sublimate corrosive mercury.

Edinb.

'Take of

Sublimate corrosive mercury, six grains;

Sal ammoniac, twelve grains.

Dissolve in a pound of distilled water.

If hard water is used for this purpose, the solution suffers a kind of decomposition from the nitrous selenite of the water.

'THE solution of corrosive sublimate in water is very much assisted by sal ammoniac. There was a practice some years ago, of mixing up this solution with wheat-flour into the consistence of pills for internal use; and the quantity of sublimate in each pill was easily ascertained.

'This solution may also be used for washing venereal and other sores; but in many instances it will be found too acrid for that purpose, and will

require being weakened by adding a portion of water.

'We next proceed to certain changes produced on sublimate corrosive mercury by various means.'

MERCURIUS DULCIS SUBLIMATUS.

Dulcified mercury sublimate.

Lond.

Take of

Corrosive mercury sublimate, one pound;

Purified quicksilver, nine ounces.

Having powdered the sublimate, add to it the quicksilver, and digest them together in a matraass, with a gentle heat of sand, until they unite; then, increasing the heat, let the mixture be sublimed. The sublimed matter, freed from the acrimonious part at top and such mercurial globules as happen to appear distinct in it, is to be reduced into powder, and sublimed again; and this sublimation repeated six times.

MERCURIUS DULCIS.

Edinb.

'Take of

Corrosive mercury sublimate, reduced to powder in a glass mortar, four ounces;

Pure quicksilver, three ounces and a half.

Mix them well together, by long trituration in a glass or marble mortar, until the quicksilver ceases to appear. Put the powder into an oblong phial, of such a size, that only one-third of it may be filled; and set the glass in sand. By degrees of fire, successively applied, almost all the mercury will sublime, and adhere to the upper part of the vessel. The glass being then broken, and the red powder which is found in its bottom, with the whitish one that sticks

sticks about the neck, being thrown away, let the white mercury be sublimed again three or four times, and reduced to a very fine powder.

THE trituration of corrosive sublimate with quicksilver is a very noxious operation: for it is almost impossible, by any care, to prevent the lighter particles of the former from arising so as to affect the operator's eyes and mouth. It is nevertheless of the utmost consequence, that the ingredients be perfectly united before the sublimation is begun: this may be most commodiously effected, by the digestion ordered in the first of the above processes. It is indeed still necessary to pulverise the sublimate before the mercury is added to it; but this may be safely performed, with a little caution; especially if during the pulverisation the matter be now and then sprinkled with a little spirit of wine: this addition does not at all impede the union of the ingredients, or prejudice the sublimation: it will be convenient not to close the top of the subliming vessel with a cap of paper at first (as is usually practised), but to defer this till the mixture begins to sublime, that the spirit may escape.

The rationale of this process deserves particular attention; and the more so, as a mistaken theory herein has been productive of several errors with regard to the operation of mercurials in general. It is supposed, that the dulcification, as it is called, of the *mercurius corrosivus*, is owing to the spiculæ or sharp points, on which its corrosiveness depends, being broken and worn off by the frequent sublimations. If this opinion was just, the corrosive would become mild, without any addition, barely by repeating the sublimation; but this is contrary to

all experience. The abatement of the corrosive quality of the sublimate is entirely owing to the combination of so much fresh mercury with it as is capable of being united; and by whatever means this combination is effected, the preparation will be sufficiently dulcified. Triture and digestion promote the union of the two, whilst sublimation tends rather to disunite them. The prudent operator, therefore, will not be solicitous about separating such mercurial globules as appear distinct after the first sublimation: he will endeavour rather to combine them with the rest, by repeating the triture and digestion.

The college of Wirtemberg require their *mercurius dulcis* to be only twice sublimed; and the Augustan, but once; and Neumann proposes making it directly, by a single sublimation, from the ingredients which the corrosive sublimate is prepared from, by only taking the quicksilver in a larger proportion. If the medicine, made after either of these methods, should prove in any degree acrid, water boiled on it for some time will dissolve and separate that part in which its acrimony consists. The marks of the preparation being sufficiently dulcified, are, its being perfectly insipid to the taste, and indissoluble by long boiling in water. Whether the water, in which it has been boiled, has taken up any part of it, may be known by dropping into the liquor a ley of any fixt alkaline salt, or any volatile alkaline spirit: if the decoction has any mercurial impregnation, it will grow turbid on this addition: if otherwise, it will continue limpid. But here care must be taken not to be deceived by an extraneous saline matter in the water itself: most of the common spring waters turn milky on the addition of alkalis:
and

and therefore, for experiments of this kind, distilled water, or rain water, ought to be used.

Mercurius dulcis, seven times sublimed, has been commonly called *Calomelas*, and *Aquila alba*; names which are now dropt both by the London and Edinburgh Colleges. *Calomelas* is indeed a very improper name for a white preparation, the word implying a black colour: by grinding mercurius dulcis with volatile spirits, it becomes blackish, and this perhaps is the true calomel.

MERCURIUS DULCIS PRÆCIPITATUS.

Sweet mercury by precipitation.

Take of

Quicksilver,

Nitrous acid, of each four parts;

Common salt, three parts;

Water, forty parts.

Dissolve the quicksilver in the nitrous acid, by mixing them together in a long-necked matras, which is to be placed in a sand-bath: the heat is raised till it nearly boil, and kept so three or four hours, after which the solution is made to boil about twenty minutes. In this state it is poured into the solution of the salt in the water, which last is also to be at a boiling heat: this mixture is to be carefully kept in constant motion during the whole time of its being performed. After the precipitate settles, the clear liquor is to be decanted off, and the precipitate washed with hot water till the water comes off tasteless.

‘ THIS process has been lately recommended by Mr Scheele of Sweden, as an easy and expeditious method of preparing sweet mercury. It appears from several tests, that this precipitate is equal in every re-

spect to that prepared by the preceding processes; it is less troublesome and expensive; and the operator is not exposed to the noxious dust arising from the triture of the quicksilver with the corrosive sublimate, which necessarily happens by the common method. The powder is also finer than can be made from the common sublimed sweet mercury by any trituration whatever. The clear liquor standing over the precipitate, is a solution of cubic or rhomboidal nitre.’

Mercurius dulcis appears to be one of the best and safest preparations of this mineral, ‘when intended to act as a quick and general stimulant.’ Many of the more elaborate processes are no other than attempts to produce from mercury such a medicine as this really is. The dose, for raising a salivation, is ten or fifteen grains, taken in the form of a bolus or pills, every night or oftener, till the ptyalism begins. As an alterant and diaphoretic, it is given in doses of five or six grains; a purgative being occasionally interpolated, to prevent its affecting the mouth. It answers, however, much better when given in smaller quantities, as one, two, or three grains every morning and evening, in conjunction with such substances as determine its action to the skin, as the extract or resin of guaiacum; the patient at the same time keeping warm, and drinking liberally of warm diluent liquors. By this method of managing it, obstinate cutaneous and venereal distempers have been successfully cured, without any remarkable increase of the sensible evacuations. ‘It is sometimes, however, difficult to measure its effects in this way; and it is so very apt to run off by the guts, that we can seldom administer it in such a manner as to produce such permanent effects as are often required, but which we are able

able to do by other preparations. It has lately been proposed to rub the gums and inside of the mouth with this preparation, as a ready and effectual method of producing salivation; this practice has been particularly recommended in the internal hydrocephalus, where it is exceedingly difficult to excite a salivation by other means. The advantages of this practice are not fully confirmed by experience.

PANACEA MERCURII.

Mercurial panacea.

Take any quantity of levigated calomel, and four times as much spirit of wine. Digest them together in a sand-heat for twenty days, frequently shaking the vessel; then pour off the spirit, and dry the powder for use.

THIS preparation differs very little, if at all, from the foregoing; for, as Lemery observes, the spirit of wine does not dissolve any part of the calomel. Some chemists have therefore recommended a proof-spirit, or common water, as more suitable for this purpose than rectified spirit: if any part indeed of the calomel remains not sufficiently dulcified, this will be dissolved by boiling in water, and consequently the preparation becomes milder; but if the calomel is well made, even water will have no effect upon it; the mercury and spirit of salt being so closely united to each other, as not to admit of any separation by the means here proposed. Nor indeed does good mercurius dulcis want any of its acid to be taken away, as being already sufficiently safe and mild in its operation. The Edinburgh College therefore, who received this preparation in the former editions of their Pharmacopœia, have now rejected it.

MERCURIUS PRÆCIPITATUS ALBUS.

White precipitate of mercury.

Edimb.

Dissolve sublimate corrosive mercury in a sufficient quantity of hot water, and gradually drop into the solution some spirit of sal ammoniac, as long as any precipitation ensues. Wash the precipitated powder upon a filtre, with several fresh quantities of warm water.

THIS preparation is used chiefly in ointments, in which intention its fine white colour is no small recommendation to it. For internal purposes it is rarely employed, nor is it at all wanted: it is nearly similar to mercurius dulcis, but less certain in its effects. Corrosive sublimate, as we have already seen, consists of mercury united with a large proportion of acid: it is there dulcified by adding as much fresh mercury as is sufficient to satiate all the acid; here, by separating all the acid that is not satiated. This last way seems an unfrugal one, on account not only of the loss of the acid, but of the volatile spirit necessary for absorbing it. The operator may however, if it should be thought worth while, recover the volatile salt from the liquor, by adding to it, after the precipitate has been separated, a proper quantity of potash, and distilling with a gentle heat, in the same manner as for the spirit or volatile salt of sal ammoniac; for a true sal ammoniac is regenerated, in the precipitation, from the union of the volatile spirit with the marine acid of the sublimate. It is by no means adviseable to use the liquor itself as a solution of sal ammoniac, or to separate the sal ammoniac from it by evaporation and crystallisation, as a part of the mercury might be retained, and communicate dangerous

ous qualities: but the volatile salt separated by distillation may be used without fear of its containing any mercury, none of which will arise with the heat by which volatile salts are distilled.

Fixt alkalis answer as effectually, for precipitating solutions of sublimate, as the volatile; but the precipitate, obtained by means of the former, instead of being white, as with the latter, is generally of a reddish yellow or orange colour. If sal ammoniac be dissolved along with the sublimate, the addition of fixt alkalis will now, extricating the volatile alkali of the sal ammoniac, occasion as white a precipitation as if the volatile alkali had been previously separated and employed in its pure state: and this compendium is now allowed by the London College. The process is as follows:

Lond.

Take

Sublimate corrosive mercury,

Sal ammoniac, of each equal weights.

Dissolve them both together in water, filtre the solution, and precipitate it with a solution of any fixt alkaline salt. Wash the precipitated powder till it is perfectly sweet (that is, insipid or void of acrimony.)

HERE the sal ammoniac, besides its use in the capital intention, to make a white precipitation, promotes the solution of the sublimate; which, of itself, is difficultly, and scarce at all totally soluble by repeated boiling in water: for however skilfully it is prepared, some part of it will have an under-proportion of acid, and consequently approach to the state of mercurius dulcis. A good deal of care is requisite in the precipitation; for if too large a quantity of the fixt al-

kaline solution be imprudently added, the precipitate will lose the elegant white colour for which it is valued.

A PRECIPITATE of a different nature from the preceding, has been commonly distinguished by the same name, MERCURIUS PRÆCIPITATUS ALBUS; the preparation of which, in a former edition of the Edinburgh Pharmacopœia, is as follows;

Take any quantity of the solution of mercury (made in aquafortis) and pour into it, by little and little, some very strong brine of sea-salt, until all the quicksilver is precipitated in form of a very white powder; which is to be washed upon a filtre with warm water, till the water comes off without any acrimony. The powder is then to be put betwixt the folds of paper, and dried with a very gentle heat.

THIS is a very unfrugal preparation: for sea-salt, in whatever proportion it be added, will not precipitate all the mercury: this evidently appears upon adding a small quantity of a solution of fixt alkaline salt, or volatile alkaline spirit, to the liquor which remains after the precipitate is fallen, when it will again grow turbid, and let fall a considerable quantity of fresh precipitate. Homberg observes, that if the acid spirit bears an over-proportion to the mercury in the solution, no precipitation at all will follow upon the affusion of the brine of sea-salt. If the precipitate be washed too often with hot water, it will all dissolve and pass the filtre: the same accident will likewise happen, if the brine employed at first to throw down the mercury be suffered to stand too long upon the precipitate.

Some have been accustomed to sub-

substitute the above officinal white precipitate in the place of this; but very injudiciously: the first is so mild, as not improperly to deserve the appellation by which it is distinguished in a former Edinburgh Pharmacopœia, *dulcis*; whilst this last is so far corrosive, as to be employed by the farriers for the purposes of an escharotic. Internally, it is among us very rarely made use of; notwithstanding the character given of it by Boerhaave, of being "perhaps the best remedy hitherto afforded by mercury." *Mercurius dulcis* produces the good effects which this is supposed to do, with a greater degree of certainty, and without disordering the constitution, occasioning vomiting, &c. which this precipitate, in a dose of two or three grains, frequently does.

**MERCURIUS PRÆCIPITATUS
FUSCUS, vulgo WURTZII.**

Brown, commonly called Wurtz's, precipitate.

Take any quantity of a solution of mercury (made in aquafortis) and gradually drop it into oil of tartar per deliquium, till the effervescence ceases. A powder will precipitate, which is to beedulcorated as the foregoing.

THIS preparation was in considerable esteem some years ago, but at present is rarely or never made use of; and hence it is now rejected both by the London and Edinburgh Colleges. It does not seem to differ in strength or effects from the sweet precipitate.

**MERCURIUS
PRÆCIPITATUS VIRIDIS.**

Green precipitate of mercury.

Edinb. +

Dissolve four ounces of corrosive sublimate mercury (previously re-

duced to powder) in a quart of hot water.

Digest an ounce and a half of copper filings, with eight ounces of spirit of sal ammoniac, in a matras, until a deep blue tincture is extracted.

Filtre the tincture, and drop it by degrees into the mercurial solution: when the precipitate has fallen, evaporate in a sand-heat to dryness.

THIS differs from the sweet precipitate, in containing an admixture of copper, which renders it an emetic too rough to be used internally with safety: and hence the present practice has almost entirely rejected it.

The preparation is considerably different from the green precipitate of foreign pharmacopœias. There, the proportion of copper, contained in the preparation when finished, is much greater; for, though the quantity directed to be taken is less, yet aquafortis being employed for the menstruum, the whole is dissolved; whereas the volatile spirit, here employed, extracts but a very small portion of it.

**PULVIS MERCURII
CINEREUS.**

*Ash-coloured powder of mercury.
Edinb.*

Take of
Quicksilver,
Weak nitrous acid, equal weights.
Mix them so as to dissolve the quicksilver; dilute the solution with pure water, and add spirit of sal ammoniac as much as is sufficient to separate the mercury perfectly from the acid; then wash the powder in pure water, and dry it.

In this process the mercurial nitre is decomposed; the precipitate, there-

M m

therefore is a calx of mercury, and the clear liquor a solution of nitrous ammoniac. From the great attraction that the nitrous acid has for phlogiston, or from its ready disposition to part with pure air, the precipitates of mercury, from its solution in this acid, are more completely in the state of a calx than those from any other menstruum. There are, however, several niceties to be observed in conducting this process. If we employ too small a proportion of acid, and assist the solution by heat, the solution will contain an excess of calx capable of being separated by the water; and the whole precipitate from such a solution would be of a white colour. If, on the other hand, we employ too large a proportion of acid, the mercury is then so far calcined as to be capable of being dissolved by the volatile alkali: and this might happen in proportion as the quantity should be superabundant to the neutralisation of the acid. The use of the water is to dissolve the nitrous ammoniac as fast as it is formed, and thereby prevent it from falling down and mixing with the precipitate. It is necessary to employ the purest water, as if such was used as contains a nitrous selenite, not only a part of the mercury may be precipitated by the base of the selenite; but this last might also be deposited by the succeeding addition of the alkali.

The pulvis mercurii cinereus has of late years been much celebrated for the cure of venereal affections. It was first proposed by Dr Saunders to be made by precipitating the mercury from calomel, as the best substitute for the tedious and expensive process of the *precipitatus per se*, and of the grey powder produced by triture with gum arabic. From the testimony of Dr Home, and several other practitioners, we have no doubt of its being a very va-

luable preparation of mercury. It may be given in a bolus or wafer from one to six or seven grains; the dose being gradually increased according to its effects upon the person.

MERCURIUS EMETICUS FLAVUS.

The yellow mercurial emetic.
Lond.

Upon purified quicksilver, contained in a glass vessel, pour double its weight of the strong spirit, or oil of vitriol. Heat the liquor by degrees, so as at length to make it boil, till a white mass remains, which is to be thoroughly dried with a strong fire. This mass, on the affusion of warm water, grows yellowish, and falls into powder, which is to be diligently ground with the water in a glass mortar: then suffer it to settle, pour off the water, and wash the powder in several parcels of fresh water, until it is sufficiently dulcified.

MERCURIUS FLAVUS, vulgo TURPETHUM MINERALE.

Yellow mercury, commonly called Turbith mineral.

Edinb.

Take four ounces of quicksilver, and eight ounces of vitriolic acid. Cautiously mix them together, and distil in a retort, placed in a sand-furnace, to dryness; the white calx, which is left at the bottom, being ground to powder, and thrown into warm water, immediately grows of a yellow colour: purify this in fresh waters renewed several times.

THE quantity of oil of vitriol, formerly directed, was double to that in the above prescriptions: the reduction, now made in this article, greatly

greatly facilitates the process: and even less than the present quantity would suffice.

Boerhaave directs this preparation to be made in an open glass, slowly heated, and then placed immediately upon burning coals; care being taken to avoid the fumes, which are extremely noxious. This method will succeed very well with a little address, when the ingredients are in small quantity: but where the mixture is large, it is better to use a retort, placed in a sand-furnace, with a recipient, containing a small quantity of water, luted to it. Great care should be taken, when the oil of vitriol begins to bubble, to steadily keep up the heat, without at all increasing it, till the ebullition ceases, when the fire should be augmented to the utmost degree, that as much as possible of the redundant acid may be expelled.

If the matter be but barely exhausted, it proves a caustic salt, which in the ablution with water will almost all dissolve, leaving only a little quantity of turbith: the more of the acid has been dissipated, the less of the remaining mercury will dissolve, and consequently the yield of turbith will be greater; fire expelling only the acid (viz. such part of the acid as is not completely satiated with mercury) while water takes up always, along with the acid, a proportionable quantity of the mercury itself. Even when the matter has been strongly calcined, a part will still be soluble: this evidently appears upon pouring into the washings a little solution of fixt alkaline salt, which will throw down a considerable quantity of yellow precipitate, greatly resembling the turbith, except that it is less violent in operation.

From this experiment it appears, that the best method of edulcorating this powder is, by impregna-

ting the water, intended to be used in its ablution, with a determined proportion of fixt alkaline salt: for by this means, the washed turbith will not only turn out greater in quantity, but, what is of more consequence, always have an equal degree of strength; a circumstance which deserves particularly to be considered, especially in making such preparations as, from an error in the process, may prove too violently corrosive to be used with any tolerable degree of safety. It is necessary to employ warm water if we are anxious for a fine colour. If cold water is used, the precipitate is white.

It is observable, that though the superfluous acid is here absorbed from the mercury by the alkaline salt; yet in some circumstances this acid forsakes that salt to unite with mercury. If *tartarum vitriolatum*, or *nitrum vitriolatum* (i. e. a combination of vitriolic acid with fixt alkali), be dissolved in water, and the solution added to a solution of mercury in aquafortis, the vitriolic acid will unite with the mercury, and form with it a turbith, which falls to the bottom; leaving only the alkali dissolved in the aquafortis, and united with the acid thereof into a regenerated nitre. On this principle depends the preparation described by Wilson, under the title of *An excellent precipitate of mercury*; which is no other than a true turbith, tho' not generally known to be such. It is made by dissolving four ounces of nitrum vitriolatum in sixteen ounces of spirit of nitre; dissolving in this compound liquor four ounces of mercury; abstracting the menstruum in a sand-heat; and edulcorating with water the gold-coloured mass which remains.

Turbith mineral is a strong emetic, and in this intention operates the most powerfully of all the mercurials that can be safely given internally.

ternally. Its action however is not confined to the primæ viæ; it will sometimes excite a ptyalism, if a purgative is not taken soon after it. This medicine is used chiefly in virulent gonorrhœas, and other venereal cases, where there is a great flux of humours to the parts: 'Its chief use at present is in swellings of the testicle from a venereal affection; and it seems not only to act as a mercurial, but also, by the severe vomiting it occasions, it may perform the office of a discutient, by accelerating the motion of the blood in the parts affected.' It is said likewise to have been employed with good success, in robust constitutions, against leprous disorders, and obstinate glandular obstructions: the dose is from two grains to six or eight. It may be given in doses of a grain or two as an alterative and diaphoretic, after the same manner as the *mercurius calcinatus* already spoken of. 'Dr Hope has found, that the turbith mineral is the most convenient errhine he has had occasion to employ.'

This medicine was lately recommended as the most effectual preservative against the hydrophobia. There are several examples of its preventing madness in dogs that had been bitten; and some of its performing a cure after the madness was begun: from six or seven grains to a scruple may be given every day, or every other day, for a little time, and repeated at the two or three succeeding fulls and changes of the moon. Some few trials have likewise been made on human subjects bitten by mad dogs; and in these also the turbith, used either as an emetic or alterative, seemed to have good effects. See James's treatise on *Canine Madness*.

The washings of turbith mineral are used by some, externally, for the itch and other cutaneous foulnesses.

In some cases mercurial lotions may be proper, but they are always to be used with great caution: this is by no means an eligible one, as being extremely unequal in point of strength; more or less of the mercury being dissolved, as observed above, according to the degree of calcination. The pharmacopœia of Paris directs a mercurial wash free from this inconvenience, under the title of *Aqua mercurialis*, or *Mercurius liquidus*. It is composed of one ounce of mercury, dissolved in a sufficient quantity of spirit of nitre, and diluted with thirty ounces of distilled water. In want of distilled water, rain water may be used; but of spring waters there are very few which will mix with the mercurial solution, without growing turbid and precipitating a part of the mercury.

SOLUTIO MERCURIALIS SIMPLEX.

Simple mercurial solution.

Joseph James Plenck.

'Take of

Purest quicksilver, one dram;

Gum arabic, two drams.

Beat them by turns in a stone mortar, adding by little and little distilled water of fumitory, till the mercury thoroughly disappear in the mucilage.

Having beat and mixed them thoroughly, add by degrees, and at the same time rubbing the whole together,

Syrup of kermes, half an ounce;

Distilled water of fumitory,
eight ounces.

'This mixture was much celebrated by its author as an effectual preparation of mercury, unattended also with the inconvenience of producing a salivation. By a long continued triture mercury seems to undergo a degree of calcination: at least

least its globular appearance is not to be discerned by the best microscope; its colour is converted into that of a greyish powder; and from the inactive substance in its globular form, it is now become one of the most powerful preparations of this metallic body. The use of the gum seems to be nothing more, than to afford the interposition of a viscid substance to keep the particles at a distance from one another, till the triture requisite to produce this change is performed. Dr Saunders has clearly proved, that no real solution takes place in this process; and that though a quantity of mercurial particles are still retained in the mixture after the globular parts have been deposited by dilution with water, yet that this suspended mercurial matter is only diffused in the liquor, and capable of being perfectly separated by filtration. That long triture is capable of effecting the above change on mercury, is fully evinced from the well known experiment of Dr Boerhaave, in producing a kind of calcined mercury by exposing quicksilver inclosed in a phial to the agitation produced by keeping the phial tied to a wind-mill for fourteen years. By inclosing a pound of quicksilver in an iron box, with a quantity of iron nails and a small quantity of water, (by the addition of which, a greater degree of intestine motion is given to the particles of the mercury), and fixing the box to the wheel of a carriage, Dr Saunders obtained, during a journey of four hundred miles, two ounces of a greyish powder, or calx of mercury.

‘ On the above accounts we are not to ascribe the effects of Plenck’s solution to an intimate division of the globules of mercury, nor to any affinity, nor electric attraction, betwixt gum arabic and mercury; which last Mr Plenck has very unphilosophically supposed. The same thing can be done by means of gum tragacanth, by honey, and by sundry balsams. It is evidently owing to the conversion of the quicksilver to a calciform nature; but as this will be accomplished more or less completely, according to the different circumstances during the triture, it is certainly preferable, instead of Plenck’s solution, to diffuse in mucilage, or other viscid matters, a determinate quantity of the *Pulvis cinereus*, or other calx of mercury.

‘ It is proper to take notice, that there is in many instances a real advantage in employing mucilaginous matters along with mercurials, these being found to prevent diarrhœa and salivation to a remarkable degree. So far, then, Plenck’s solution is a good preparation of mercury, tho’ his chemical rationale is perhaps erroneous. The distilled water and syrup are of no consequence to the preparation, either as facilitating the process, or for medicinal use.

‘ It is always most expeditious to triturate the mercury with the gum in the state of mucilage. Dr Saunders found that the addition of honey was an excellent auxiliary; and the mucilage of gum tragacanth seems better suited for this purpose than that of gum arabic.’

S E C T. VIII.

PREPARATIONS OF ANTIMONY.

ANTIMONY is composed of a metal, united with sulphur or common brimstone.

If powdered antimony be exposed to a gentle fire, the sulphur exhales; the metallic part remaining in form of a white calx, reducible, by proper fluxes, into a whitish brittle metal, called *regulus*. This is readily distinguished from the other bodies of that class, by its not being soluble in aquafortis; its proper menstruum is aqua regis.

If aqua regia be poured upon crude antimony, the metallic part will be dissolved; and the sulphur thrown out, partly to the sides of the vessel, and partly to the surface of the liquor, in form of a greyish yellow substance. This, separated and purified by sublimation, appears on all trials the same with pure common brimstone.

The metal, freed from the sulphur naturally blended with it, and afterwards fused with common brimstone, resumes the appearance and qualities of crude antimony.

THE antimonial metal is a medicine of the greatest power of any known substance: a quantity too minute to be sensible on the tenderest balance, is capable of producing virulent effects, if taken dissolved, or in a soluble state. If given in such a form as to be immediately miscible with the animal fluids, it proves violently emetic; if so managed as to be more slowly acted on, cathartic; and in either case, if the dose is extremely small, diaphoretic. Thus, though vegetable acids extract so

little from this metal, that the remainder seems to have lost nothing of its weight, the tinctures prove in no large doses strongly emetic, and in smaller ones powerfully diaphoretic. The regulus has been cast into the form of pills, which acted as virulent cathartics, though without suffering any sensible diminution of weight in their passage through the body; and this repeatedly, for a great number of times.

This metal, divested of the inflammable principle which it has in common with other metallic bodies that are reduced to a calx, becomes indissoluble and inactive. The calx nevertheless, urged with a strong fire, melts into a glass, as easy of solution (partially) and as virulent in operation, as the regulus itself: the glass, thoroughly mingled with such substances as prevent its solubility, as wax, resins, and the like, is again rendered mild.

Vegetable acids, as already observed, dissolve but an extremely minute portion of this metal: the solution nevertheless proves powerfully emetic and cathartic. The nitrous and vitriolic acids only corrode it into a powder, to which they adhere so slightly as to be separable in good measure by water, and totally by fire, leaving the regulus in form of a calx similar to that prepared by fire alone. The marine acid has a very different effect: this reduces the regulus into a violent corrosive; and though it difficultly unites, yet very closely adheres to it, inasmuch as not to be separable by any ablution, nor by fire, the regulus arising along with it. The nitrous or vitriolic

trilic acids expel the marine, and thus reduce the corrosive into a calx similar to the foregoing.

Sulphur remarkably abates the power of this metal: and hence crude antimony (in which the regulus appears to be combined with from one fourth to one half its weight of sulphur), proves altogether mild. If a part of the sulphur be taken away, by such operations as do not destroy or calcine the metal, the remaining mass becomes proportionably more active.

The sulphur of antimony may be expelled by deflagration with nitre: the larger the quantity of nitre, to a certain point, the more of the sulphur will be dissipated, and the preparation will be the more active. If the quantity of nitre is more than sufficient to consume the sulphur, the rest of it, deflagrating with the inflammable principle of the regulus itself, renders it again mild.

The sulphur of antimony is likewise absorbed, in fusion, by certain metals, and by alkaline salts. These last, when united with sulphur, prove a menstruum for all the metals (zinc excepted); and hence, if the fusion is long continued, the regulus is taken up, and rendered soluble in water.

CROCUS ANTIMONII MEDICINALIS.

Medicinal crocus of antimony.

Take of

Antimony, eight parts;

Nitre, one part.

Mix, and throw them by little at a time, into a red-hot crucible: when the deflagration ceases, take the crucible out of the fire, and reduce the matter into powder.

THIS preparation is sufficiently mild, though considerably more active than the crude mineral: eighteen or twenty grains will in some

constitutions operate, though very gently, both upwards and downwards. It appears to be nearly similar to the *medicinal regulus* hereafter described.

In this and the following processes with nitre, the operator must observe to throw into the crucible only a little of the matter at a time, and to wait till the deflagration of one parcel is over before another is added; for if much was put in at once, the deflagration would be so violent, that great part of the matter would be thrown over the crucible. The powder is most conveniently introduced by means of a small iron ladle: care must be taken not to bring back with the ladle any spark of coal, which would set fire to the rest of the mixture.

CROCUS ANTIMONII MILDIOR.

The milder crocus of antimony.

Take of

Antimony, two parts;

Nitre, one part.

Mix them together, and throw the powder by degrees into a red-hot crucible. As soon as the deflagration ceases, remove the matter from the fire (without suffering it to melt), and reduce it into powder.

THIS preparation is called '*Mildior*', not in regard to the crocus above described, but to that which follows. It acts much more powerfully than the foregoing; the increase of the nitre occasioning a greater quantity of the sulphur of the antimony to be dissipated. The London Committee received it in their first draught, with the character of an antimonial of mild operation, which had proved a successful medicine in numerous instances, without any one example of its being unsafe. Some trials, however,

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after-

afterwards reported to them, where the operation of this and the following crocus were compared, induced them to lay this preparation aside. It appears to differ from the other only in being less violent.

CROCUS ANTIMONII.

Crocus of antimony, commonly called *Crocus metallorum*, and by foreign writers. *Hepar antimony*, or *Liver of antimony*.

Lond.

Take

Antimony,
Nitric, of each equal weights.

Reduce them separately into powder; then mix, and inject them into a crucible heated to a white heat, that the mixture (after deflagration) may melt. Then pour it out, separate the scorizæ, and reserve the matter underneath them for use: it proves different in colour, according to the continuance of the heat; the longer it has been kept in fusion, the yellower it will be.

Edinb.

The mixture of antimony and nitre, made as above, is to be injected into a red-hot crucible; when the detonation is over, separate the reddish metallic matter from the whitish crust; 'beat it into a powder, and edulcorate it by repeated washings with hot water till the water comes off insipid.'

HERE the antimonial sulphur is almost totally consumed, and the metallic part left divested of its corrector. These preparations, given from two to six grains, generally act as violent emetics, greatly disordering the constitution. 'But we shall afterwards show, that their operation, like that of every preparation of antimony whose reguline part is not joined with an acid, must be liable to variations, according to

the quantity and condition of the acid in the stomach.' Their principal use is in maniacal cases; as the basis of some other preparations; and among the farriers, who frequently give to horses an ounce or two a day, divided into different doses as an alterative: in these, and other quadrupeds, this medicine acts chiefly as a diaphoretic.

The chemists have been accustomed to make the crocus with a less proportion of nitre than directed above; and without any farther melting than what ensues from the heat that the matter acquires by deflagration, which when the quantity is large, is very considerable: a little common salt is added to promote the fusion. The mixture is put by degrees into an iron pot or mortar, somewhat heated, and placed under a chimney: when the first ladleful is in, a piece of lighted charcoal is thrown to it, which sets the matter on fire; the rest of the mixture is then added by little and little; the deflagration is soon over, and the whole appears in perfect fusion: when cold, a considerable quantity of scorizæ are found upon the surface; which scorizæ are easily knocked off with a hammer. The crocus prepared after this manner, is of a redder colour than that of the first of the above processes.

CROCUS ANTIMONII LOTUS.

Washed crocus of antimony.
 Lond.

Reduce the crocus into a very subtile powder, and boil it in water; then, throwing away this water, wash the powder several times in fresh warm water until it becomes perfectly insipid.

THIS process is designed chiefly to fit the crocus for the preparation of emetic tartar, of which hereafter, and

and of the antimonial emetic wine, page 307. If the crocus was employed for those purposes without washing, the alkaline salt, which it is in some degree impregnated with from the deflagration of the nitre, would in part satiate the acids of the tartar and of the wine, and thus impeding their action on the metallic part of the antimony, render the medicines very precarious in strength. That uncertainties of this kind may be the more effectually guarded against, the glass, or rather the pure regulus of antimony, is by some preferred to the crocus, both for the emetic tartar and wine. The Edinburgh College, as appears in the foregoing process, does not allow the crocus to be kept in its unwashed state, making the ablution a part of the preparation of it.

EMETICUM MITE ANTIMONII.

A mild antimonial emetic.

Take of

Antimony, one part ;

Nitre, two parts.

Grind them together, and throw them by little and little into a red hot crucible : when the deflagration is over, the remaining matter, which proves white, is to be washed for use.

THE quantity of nitre is here so large, as to consume not only the sulphur of the antimony, but likewise great part of the inflammable principle of the regulus. Boerhaave, from whom this preparation is taken, informs us, that it is so mild as often to occasion only some light nausea and gentle vomiting, with a large discharge of saliva and thick urine. Its effects seem to be nearly the same with those of the *Regulus medicinalis* and *Crocus medicinalis*.

CALX ANTIMONII.

Calx of antimony, commonly called Diaphoretic antimony.

Lond.

Take of

Antimony, one part ;

Nitre, three parts.

Let the powdered antimony be well mixed with the nitre, and gradually injected into a crucible, heated to a light white heat; the matter being afterwards taken from the fire, is to be washed with water, both from the salt which adheres to it, and from the grosser part that is less perfectly calcined.

Edinb. +

Take of

Antimony, half a pound ;

Nitre, a pound and a half.

Reduce them separately into powder, then mix them together, and throw the mixture, by a small ladleful at a time, into a red-hot crucible : when the detonation is over, let the white mass be calcined in the fire for half an hour longer ; then powder, and keep it in a glass vessel closely stoped.

This powder, unwashed, is called

ANTIMONIUM DIAPHORETICUM NITRATUM.

Nitrated diaphoretic antimony. +

When the powder is washed with fresh quantities of water, till the water comes off insipid, it is called

ANTIMONIUM DIAPHORETICUM LOTUM.

Washed diaphoretic antimony.

The several washings, mixed together, filtered, and evaporated over a gentle fire till a cuticle forms

forms on the surface, yield in the cold crystals, called

NITRUM STIBIATUM.

Antimoniated nitre. +

THE calx of antimony, when freed by washing from the saline matter, is extremely mild, if not altogether inactive. Hoffman, Lemery, and others, assure us, that they have never experienced from it any such effects as its usual title (that under which it stands in the last of the above processes) imports: Boerhaave declares, that it is a mere metallic earth, entirely destitute of all medicinal virtue: and the Committee of the London College admit, that it has no sensible operation. The common dose is from five grains to a scruple, or half a dram; though Wilson relates, that he has known it given by half ounces, and repeated two or three times a-day, for several days together.

Some report, that this calx, by keeping for a length of time, contracts an emetic quality: From whence it has been concluded, that the powers of the reguline part are not entirely destroyed; that the preparation has the virtues of other antimonials which are given as alteratives; that is, in such small doses as not to stimulate the primæ viæ; and that therefore diaphoretic antimony, as it is certainly among the mildest preparations of that mineral, may be used for children, and such delicate constitutions where the stomach and intestines are easily affected. The observation, however, from which these conclusions are drawn, does not appear to be well founded: Ludovici relates, that after keeping the powder for four years, it proved as mild as at first: and the Strassburgh Pharmacopœia, with good reason, suspects, that where the calx has proved emetic, it had

either been given in such cases as would of themselves have been attended with this symptom (for the great alexipharmac virtues attributed to it, have occasioned it to be exhibited even in the more dangerous malignant fevers, and other disorders, which are frequently accompanied with vomiting), or that it had not been sufficiently calcined, or perfectly freed from such part of the regulus as might remain uncalcined. The uncalcined part being grosser than the true calx, the separation is effected by washing over with water, in the same manner as directed in page 267, for separating earthy powders from their grosser parts.

It has been observed, that when diaphoretic antimony is prepared with nitre abounding with sea-salt, of which all the common nitre contains some portion, the medicine has proved violently emetic. This effect is not owing to any particular quality of the sea salt, but to its quantity, by which the proportion of the nitre to the antimony is rendered less.

The *Nitrum stibiatum* is produced by the deflagration of the sulphur of the antimony with the nitre, in the same manner as the *Sal polychrest*, (page 486.) from which it differs no otherwise than in retaining some portion of the antimonial calx.

CALX ANTIMONII NITRATA.

Nitrated calx of antimony.
Edinb.

Take of
Antimony, calcined for making the glass of antimony,
Nitre, equal weights.
Having mixed, and put them into a crucible, let them be toasted, so as the matter shall be of a red colour, for an hour; then let it be taken out of the crucible, and, after

after beating it, wash it repeatedly with warm water till it is insipid.

‘THIS preparation differs little from the *Antimonium diaphoreticum lotum*. Both of them are nearly complete calces of antimony. But as the effects of every preparation of antimony, not already conjoined with an acid, must depend on the quantity and condition of the acid in the stomach, so the ablution of the base of the nitre in these last processes, gives full power to the acid of the stomach to act as far as possible on the calx; whereas when the unwashed calx is employed, a great quantity of the acid in the stomach is neutralized by the alkaline base of the nitre adhering to the calx. The *Calx antimonii nitrata* is supposed to be the famous James’s powder, which has been so much celebrated of late years. But I know, that the original preparation, and on which the Doctor’s heirs at present subsist, is considerably different from the one here directed.

‘The *calx antimonii nitrata* has been thought preferable to emetic tartar, where the permanent effects of a long-continued nausea are required, and where we wish our antimonials to pass the pylorus and produce purging. But, like every other preparation where the reguline part is only rendered active by the acid in the stomach, the *calx antimonii nitrata* is in all cases of uncertain operation: sometimes proving perfectly inert, and at other times very churlish in its effects. The dose is generally ten or twelve grains, and this is to be given all at once; an inconvenience not attending the emetic tartar, the quantity and effects of which we can generally measure with surprising minuteness.’

CERUSSA ANTIMONII.

Cerusse of antimony

Take of

Regulus of antimony, one part;
Nitre, three parts.

Deslagrate them together, as in the foregoing process.

THE results of both processes appear to be altogether the same. It is not necessary to use so much nitre here, as when antimony itself is employed; for the sulphur which the crude mineral contains, and which requires for its dissipation nearly an equal weight of nitre to the antimony, is here already separated. Two parts of nitre to one of the regulus are sufficient. It is better, however, to have an over-proportion of nitre than an under one, lest some parts of the regulus should escape being sufficiently calcined.

It may be proper to observe, that though crude antimony and the regulus yield the same calces, yet the salts separated in washing the calces are very different. As crude antimony contains common sulphur, the acid of the sulphur unites with the alkaline basis of the nitre, and the result is a neutral salt, (page 486.) As the regulus contains the phlogistic, or inflammable principle, but no sulphur, the nitre is alkalised, as it would be by charcoal or other like inflammable bodies, (page 441.) and is at the same time rendered more acrimonious than the common alkaline salts; ‘probably owing to the calx absorbing the air of the alkali.’ If only equal parts of the regulus and nitre be employed, and the fire kept up strong for an hour or more, the salt will prove more caustic than even the potential caustery of the shops. But the causticity of the salt will still be far greater, if, instead of the simple regulus of antimony, the martial regulus be used.

RE.

REGULUS ANTIMONII MEDICINALIS.

Medicinal regulus of antimony.
Edinb. +

Take of

Antimony, five ounces;
Sea salt, four ounces;
Salt of tartar, one ounce.

Grind them into powder, and throw the mixture, by little at a time, into a red hot crucible; occasionally breaking with an iron rod the crust that forms on the surface. When the fusion is completed, pour out the matter into a heated cone, gently shaking it now and then, or striking it on the sides, that the regulus may settle to the bottom: when grown cold, beat off the scorix, and grind the regulus into a powder, which is to be kept in a close-stopped phial.

THIS medicine is nearly similar in quality to one made with one-eighth of nitre, already described: in both processes the antimony is freed from a small portion of its sulphur, which is dissipated in flame by the nitre, and absorbed by the alkaline salt. This preparation is greatly celebrated by Hoffman, and other German physicians, in sundry obstinate chronical disorders, and esteemed one of the best antimonials that can be given with safety as alterants. It operates chiefly as a diaphoretic, and sometimes, though rarely, proves emetic. The dose is from three or four grains to twenty.

This regulus, reduced to a subtile powder, is the genuine *Febrifuge powder* of Craanius (*Pharm. Borussio-Brandenburg.*, edit. 1734. page 107.) and has been greatly commended in all kinds of fevers, both of the intermittent and continual kind, (*Pharm. Argent.* 1725. page 252.) It is said that a dose or two have

frequently removed these disorders, by occasioning either a salutary diaphoresis, or acting mildly by a stool or vomit. The colour of the levigated powder is a purplish brown. The antimonial emetic of Boerhaave, already mentioned, which is white, is nearly similar to it in its medicinal effects.

The common salt seems to be of no further use in the process, than as it serves to promote the fusion; and even for this it is not necessary. The medicine is said to be rather more mild and certain in operation if prepared without it.

‘In regard to the uncertainty of its operation, see CALX ANTIMONII NITRATA.’

REGULUS ANTIMONII.

Regulus of antimony.

Take of

Antimony,
Nitre,

Crude tartar, of each equal parts. Grind them separately into a powder; then mix, and rub them altogether. Throw the powder, at several times, into a red-hot crucible, taking care to break the crust which forms on the surface with an iron rod: when the detonation is over, let a strong fire be made, that the matter may flow like water: then pour it out into a warm greased cone, which is to be gently struck on the sides that the regulus may separate and fall to the bottom: when grown cold, let the regulus be cleared from the scorix that lie a-top of it.

IN this process, (which is taken from the edition of the Edinburgh Pharmacopœia, published in the year 1744) an alkaline salt is produced from the nitre and tartar, in such quantity, as entirely to absorb the sulphur of the antimony: the alkali,

alkali, thus sulphurated, will take up more or less of the reguline part, according to its quantity, and the continuance of the fusion.

As the ingredients are above proportioned, the yield of regulus proves extremely small, and if the fusion is long continued, scarce perceptible, almost the whole of it being taken up into the scorix: in order to obtain the largest quantity, the nitre ought to be diminished one half. It is convenient to rub the nitre and tartar together, and deflagrate them in an iron ladle or pan before their mixture with the antimony; for by this means, the loss of some part of the antimony, which otherwise happens from the vehemence of the deflagration, will be prevented, a smaller crucible will serve, and less time and labour complete the process.

The mixture of nitre and tartar deflagrated together, will reduce any of the antimonial calces (as the diaphoretic antimony, cerusse, or antimony calcined by itself) into regulus; the oily matter of the tartar supplying the inflammable principle, which all calces require for their revival into a metallic form; and the alkaline salt promoting their fusion. It is the common reducing flux of the chemists; by whom it is called, from its colour, the *black flux*. The largest yield of regulus hitherto obtained from antimony, has been got by calcining it without addition, as directed hereafter for making glass of antimony, and reviving the calx by fusion with this or other like compositions. Mr Geoffroy, who first communicated this method to the French Academy, seems to look upon soap (the substance he happened to make use of himself) as the only one that will succeed; but the effects of this are not different from those of the foregoing flux. Both consist of an alkaline salt, and an

inflammable (not sulphureous) substance, which are the only materials here necessary. Upon the whole, the most advantageous process for obtaining this regulus, appears to be the following:

Let powdered antimony be calcined or roasted over a gentle fire, as directed hereafter for making the glass. Mix the calx with about equal its weight of some reducing flux, such as the black flux above mentioned. Melt the mixture in a crucible, with a quick fire, and when in thin fusion pour it into a cone, heated over a smoaky flame; the pure regulus will fall to the bottom, the scorix floating on the top.

REGULUS ANTIMONII MARTIALIS.

Martial regulus of antimony.

Take of

Antimony,

Nitre,

Crude tartar, of each one pound;

Small pieces of iron, half a pound;

Heat the iron in a crucible to a white heat; then gradually add the other ingredients, first powdered and mixed together, and proceed in the same manner as in the foregoing process.

THE nitre might here be diminished to one-fourth its weight, and the tartar to half that quantity. The pieces of iron may be small nails; the filings of the metal, lying closer together, are not so readily acted upon by the antimony.

REGULUS ANTIMONII STELLATUS.

Stellated regulus of antimony.

This is made by melting the martial regulus several times with fresh nitre and tartar.

THE

THE simple regulus of antimony is more readily made to exhibit a starry appearance on its surface, than the martial; which it will also do by one, as well as by any number of fusions: the phenomenon entirely depends upon the regulus being pure, brought into extreme thin fusion, and cooled slowly in the cone, without shaking or moving it. If the martial regulus is employed, it is convenient to add some fresh antimony (about one-fourth the weight of the regulus) to absorb such part of the iron as may be retained in it: when the whole is in perfect fusion, inject, at times, about one-eighth of nitre, or fixt alkaline salt, previously dried, and made very hot.

The foregoing reguli are at present rarely, if ever, made use of in medicine; the emetic cups, and perpetual pills, formerly made from them, have long been laid aside as precarious and unsafe. Hence the Edinburgh College, which retained them all in the edition of their Pharmacopœia published in 1744, have at the late revival rejected them. It should seem, however, that the pure regulus, though greatly too virulent to be taken by itself, might be employed to advantage for the making of some other preparations, particularly the antimonial wine and emetic tartar: for the uncertainty in strength, which has often been complained of in those medicines, appears to proceed chiefly from saline or sulphureous matter in the antimonial preparation made use of for communicating the impregnation to the wine or tartar; and (except the calces, which are divested of the proper antimonial virtues) the regulus is the only form in which we can expect to have the metallic part of the antimony free from such admixtures, the only antimonial preparation which we can depend on

being always equal in its own degree of power.

The scorizæ produced in the foregoing processes, afford medicines less violent than the regulus itself, some of which are in considerable esteem. These scorizæ consist of the sulphur of the antimony united with an alkaline salt, and a part of the regulus taken up by this compound, and rendered soluble in water.

SULPHUR AURATUM ANTIMONII.

Golden sulphur of antimony.

Let the scorizæ of regulus of antimony be reduced into powder, whilst warm, and then boiled for a considerable time in thrice their quantity of water. Filtre the yellowish red solution, and drop into it a proper quantity of spirit of vitriol: a powder will precipitate, which is to be washed with water, till perfectly edulcorated and freed from its ill smell.

SULPHUR ANTIMONII PRÆCIPITATUM.

*Precipitated sulphur of antimony.
Lond.*

Take of

Antimony, sixteen ounces;

Tartar, a pound;

Nitre, half a pound.

Let these be reduced separately into powder, then mixed, thrown by degrees into a red-hot crucible, and melted with a strong fire. Pour out the matter into a conical mould; the metallic part, commonly called *regulus of antimony*, will sink to the bottom, the scorizæ swimming above it. Dissolve these scorizæ in water, filtre the solution through paper, and precipitate the sulphur by dropping in some spirit of sea-salt:

salt : lastly, wash the sulphur from the salts, and dry it for use.

SULPHUR AURATUM ANTIMONII.

*Golden sulphur of antimony.
Edinb.*

Boil, in an iron pot, four pounds of caustic ley diluted with three pints of water, and throw in by degrees two pounds of powdered antimony ; keeping them continually stirring, with an iron spatula, for three hours, over a gentle fire, and occasionally supplying more water. The liquor loaded with the sulphur of antimony, being then strained thro' a woollen cloth, drop into it gradually, whilst it continues hot, so much spirit of nitre, diluted with an equal quantity of water, as shall be sufficient to precipitate the sulphur, which is afterwards to be carefully washed with hot water.

THE foregoing preparations are not strictly sulphurs; they contain a considerable quantity of the metallic part of the antimony, which is reducible from them by proper fluxes. That made by the first of the above processes, contains greatest part of the metal; for, as we have already seen, very little, sometimes scarce any at all, separates in the fusion. The quantity of regulus taken up in the second also will be different, according to the degree of fire employed, and the length of time that the fusion is continued. These medicines therefore must needs be liable to great variation in point of strength; and in this respect they are, perhaps, the most precarious, though some have affirmed that they are the most certain, of the antimonial medicines.

The foregoing preparations prove emetic when taken on an empty

stomach, in a dose of four, five, or six grains; but in the present practice they are scarce ever prescribed in this intention; being chiefly used as alterative deobstruents, particularly in cutaneous disorders. Their emetic quality is easily blunted, by making them up into pills with resins or extracts, and giving them on a full stomach: with these cautions, they have been increased to the rate of sixteen grains a-day, and continued for a considerable time, without occasioning any disturbance upwards or downwards. As their strength is precarious, they should be taken at first in very small doses, and increased by degrees according to their effect.

For the reason of the uncertainty of their operation, see *CALX ANTIMONII NITRATA.*

A composition of the sulphur auratum, with mercurius dulcis, has been found a powerful, yet safe alterative, in cutaneous disorders; and has completed a cure after salivation had failed. In venereal cases, likewise, this medicine has produced excellent effects. A mixture of equal parts of the sulphur and calomel (well triturated together, and made into pills with extracts, &c.) may be taken from four to eight or ten grains, morning and night; the patient keeping moderately warm, and drinking after each dose a draught of a decoction of the woods, or other like liquors. This medicine generally promotes perspiration, scarce occasioning any tendency to vomit or purge, or affecting the mouth. See the *Edinburgh Essays*. vol. i. and the *Acta Natur. Curios.* vol. v.

KERMES MINERALIS.

Kermes mineral.

Take of

Antimony sixteen ounces;

Any

Any fixt alkaline salt, four ounces;

Water, one pint.

Boil them together for two hours, then filtre the warm liquor; as it cools, the kermes will precipitate. Pour off the water, and add to it three ounces of fresh alkaline salt, and a pint more of water: in this liquor boil the remaining antimony as before; and repeat the process a third time, with the addition of only two ounces of alkaline salt, and another pint of water; filtering the liquor as at first, and collecting the powders which subside from them in cooling.

THIS medicine has of late been greatly esteemed, in 'France especially,' under the names of *Kermes mineral pulvis*, *Carthusianus poudre des Chartreux*, &c. It was, originally, a preparation of Glauber, and for some time kept a great secret, till at length the French king purchased the preparation from M. de la Ligerie, for a considerable sum, and communicated it to the public in the year 1720. In virtue, it is not different from the sulphurs above-mentioned; all of them owe their efficacy to a part of the regulus of the antimony, which the alkaline salt, by the mediation of the sulphur, renders soluble in water.

'Chemists are, however, divided in their opinions with respect to the precise chemical condition of the reguline part in the preparations called *hepata of antimony*. Some have alleged that they contain not a particle of alkaline salt: It is at any rate certain, that the quantity and condition of the reguline part must vary according to the different proportions of the ingredients, the time of the precipitation, the greater or less degree of causticity of the

alkali employed, and several other circumstances. At best, the whole of them are liable to the same uncertainty in their operation as the calces of antimony.'

PANACEA ANTIMONII.

Panacea of antimony.

Take of

Antimony, six ounces;

Nitre, two ounces;

Common salt, an ounce and a half;

Charcoal, an ounce.

Reduce them into a fine powder, and put the mixture into a red-hot crucible, by half a spoonful at a time, continuing the fire a quarter of an hour—after the last injection: then either pour the matter into a cone, or let it cool in the crucible, which when cold must be broken to get it out. In the bottom will be found a quantity of regulus; above this a compact liver-coloured substance; and on the top, a more spongy mass: this last is to be reduced into powder, edulcorated with water, and dried when it appears of a fine golden colour.

THIS preparation is supposed to have been the basis of *Lockyer's pills*, which were formerly a celebrated purge. Ten grains of the powder, mixed with an ounce of white sugar-candy, and made up into a mass with mucilage of gum tragacanth, may be divided into an hundred small pills; of which one, two, or three, taken at a time, are said to work gently by stool and vomit. The compact liver-coloured substance, which lies immediately above the regulus, operates more churlishly. This last appears to be nearly of the same nature with the *Crocus antimonii*, and the former with the *Sulphur auratum*.

VITRUM ANTIMONII.

*Glass of antimony.**Edinb.*

• Strow antimony, beat into a coarse powder like sand, upon a shallow unglazed earthen vessel, and apply a gentle heat underneath, that the antimony may be heated slowly; keeping it at the same time continually stirring to prevent it running into lumps. White vapours of a sulphureous smell will arise from it. When at the same degree of heat these cease to exhale, increase the fire a little, so that the vapours may again arise; go on in this manner till the powder, when brought to a red heat, exhales no more vapours. Melt the calx in a crucible with an intense heat, till it takes on the appearance of melted glass; then pour it out on a heated brass plate or dish.

THE calcination of antimony, to fit it for making a transparent glass, succeeds very slowly, unless the operator be very wary and circumspect in the management of it. The most convenient vessel is a broad shallow dish, or a smooth flat tile, placed under a chimney. The antimony should be the purer sort, such as is usually found at the apex of the cones: this, grossly powdered, is to be evenly spread over the bottom of the pan, so as not lie above a quarter of an inch thick on any part. The fire should be at first no greater than is just sufficient to raise a fume from the antimony, which is to be now and then stirred: when the fumes begin to decay, increase the heat, taking care not to raise it so high as to melt the antimony, or run the powder into lumps: after some time the vessel may be made red hot, and kept in this state until the matter will not, upon being stirred, any longer fume. If this part

of the process be duly conducted, the antimony will appear in an uniform powder, without any lumps, and of a grey colour.

With this powder fill two-thirds of a crucible, which is to be covered with a tile, and placed in a wind-furnace. Gradually increase the fire till the calx is in perfect fusion, when it is to be now and then examined by dipping a clean iron wire into it. If the matter which adheres to the end of the wire appears smooth and equally transparent, the vitrification is completed, and the glass may be poured out upon a hot smooth stone or copper plate, and suffered to cool by slow degrees to prevent its cracking and flying in pieces. It is of a transparent yellowish red colour.

The glass of antimony usually met with in the shops, is said to be prepared with certain additions; which may, perhaps, render it not so fit for the purpose here designed. By the method above directed, it may be easily made in the requisite perfection without any addition.

As we have seen, in a former process, antimony rendered nearly or altogether inactive by calcination, it might be expected that the calx and glass of the present process would be likewise inert. But here the calcination is far less perfect than in the other case, where the inflammable principle of the regulus is totally burnt out by deflagration with nitre: there the calx is of perfect whiteness, and a glass made from that calx (with the addition of any saline flux, for of itself it will not vitrify) has little colour: but here so much of the inflammable principle is left, that the calx is grey, and the glass of a high colour. The calcined antimony is said by Boerhaave to be violently emetic. Experience has shown that the glass is so, in-
 so much as to be unsafe for internal

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use.

use. It is employed chiefly in the present practice as being subservient to some other preparations, particularly the emetic tartar and antimonial wine; and in combination with wax and some other substances by which its power is obtunded.

VITRUM ANTIMONII CERATUM.

*Cerated glass of antimony.
Edinb.*

Take of

Yellow wax, a dram;

Glass of antimony, reduced into powder, an ounce.

Melt the wax in an iron vessel, and throw into it the powdered glass: keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out upon a paper, and when cold grind it into powder.

THE glass melts in the wax with a very soft heat: after it has been about twenty minutes on the fire, it begins to change its colour, and in ten more comes near to that of Scotch snuff, which is a mark of its being sufficiently prepared: the quantity set down above, loses about one dram of its weight in the process.

This medicine has for some time been greatly esteemed in dysenteries: several instances of its good effects, in these cases, may be seen in the fifth volume of the Edinburgh Essays, from which the above remarks on the preparation are taken. The dose is from two or three grains to twenty, according to the age and strength of the patient. In its operation, it makes some persons sick, and vomit; it purges almost every one; though it has sometimes effected a cure without occasioning any evacuation or sickness.

Mr Geoffroy gives two pretty singular preparations of glass of an-

timony, which seem to have some affinity with this. One is made by digesting the glass, most subtilly levigated, with a solution of mastich made in spirit of wine, for three or four days, now and then shaking the mixture; and at last evaporating the spirit so as to leave the mastich and glass exactly mingled. Glass of antimony thus prepared, is said not to prove emetic, but to act merely as a cathartic, and that not of the violent kind. A preparation like this was first published by Hartmann, under the name of *chylifla*.

The other preparation is made by burning spirit of wine upon the glass three or four times, the powder being every time exquisitely rubbed upon a marble. The dose of this medicine is from ten grains to twenty or thirty: it is said to operate mildly both upwards and downwards, and sometimes to prove sudorific.

ANTIMONIUM CATHARTICUM.

The purging antimony of Wilson.

Take four ounces of glass of antimony, finely powdered, and gradually pour thereon twelve ounces of oil of vitriol; distil in a sand-heat; and wash the powder, which remains in the bottom of the retort, till all its acrimony is lost: then dry it, and grind it with an equal weight of Glauber's cathartic salt, and a double quantity of vitriolated nitre. Let this mixture be kept a quarter of an hour in gentle fusion in a crucible; and afterwards pulverised, washed, and dried for use.

Mr Wilson, the inventor of this preparation, informs us, that it is the most certain antimonial purge he ever met with; that it operates without nauseating the stomach; and that by the use of this powder only,

only, he knew three confirmed poxes cured. His dose is from two grains to ten.

We have already observed, that the glass of antimony contains a part of the regulus not fully divested of its inflammable principle. The vitriolic acid and neutral salts containing this acid, absorb the inflammable principle from sundry metallic and other bodies; and on this probably depends the mitigation of the glass in the present process.

CAUSTICUM ANTIMONIALE.

*The antimonial caustic.
Lond.*

Take of

Crude antimony, one pound;
Corrosive mercury sublimatè, two pounds.

Reduce them separately into powder; then mix, and distil them in a wide-necked retort, with a gentle sand-heat. The matter which arises into the neck of the retort is to be exposed to the air, that it may run into a liquor.

CAUSTICUM ANTIMO- NIALE, vulgo BUTYRUM ANTIMONII.

*Butter of antimony.
Edinb.*

Take of

Crude antimony, one part;
Corrosive mercury sublimate, two parts.

Grind them first separately; then thoroughly mix them together, taking the utmost care to avoid the vapours. Put the mixture into a coated glass retort (having a short wide neck) so as to fill one half of it: the retort being placed in a sand-furnace, and a receiver adapted to it, give first a gentle heat, that only a dewy vapour may arise: the fire being then increased, an oily liquor will

ascend and congeal in the neck of the retort, appearing like ice, which is to be melted down by a live coal cautiously applied. This oily matter is to be rectified, in a glass retort, into a pellucid liquor.

THESE processes are extremely dangerous, insomuch that even the life of the operator, though tolerably versed in common pharmacy, may be affected for want of taking due care herein. Boerhaave relates, that one, who from the title he gives him is not to be supposed inexpert in chemical operations, or unacquainted with the danger attending this, was suffocated for want of proper care to prevent the bursting of the retort. The fumes which arise, even upon mixing the antimony with the sublimate, are highly noxious, and sometimes issue so copiously and suddenly, as very difficultly to be avoided. The utmost circumspection therefore is necessary.

The caustic, or butter, as it is called, appears to be a solution of the metallic part of the antimony in the marine acid of the sublimate; the sulphur of the antimony, and the mercury of the sublimate, remain at the bottom of the retort, united into an ethiops. This solution does not succeed with spirit of salt in its liquid state, and cannot be effected, unless (as in the case of making sublimate) either the acid is highly concentrated, and both the ingredients strongly heated; or when the antimony is exposed to the vapours of the acid distilled from the black calx of manganese. By this last process a perfect solution of the regulus of antimony in the muriatic acid is effected. We owe the account of this simpler and less expensive method to the author of the notes to the English translation of Fourcroy's Chemistry. If regulus

of antimony was added in the distillation of spirit of sea-salt without water, a solution would also be made.

When the congealed matter that arises into the neck of the retort is liquefied by the moisture of the air, it proves less corrosive than when melted down and rectified by heat; though it seems, in either case, to be sufficiently strong for the purposes it is intended for, as the consuming of fungous flesh and the callous lips of ulcers. It is remarkable, that though this saline concrete readily and almost entirely dissolves by the humidity of the air, only a small quantity of white powder separating, it nevertheless will not dissolve on putting water to it directly: even when previously liquefied by the air, the addition of water will precipitate the solution.

CINNABARIS ANTIMONII.

Cinnabar of antimony.

Lond.

Let the matter, which remains in the retort after the distillation of the caustic, be sublimed in a coated matras, in an open fire.

Edinb. +

As soon as red vapours begin to appear in the distillation of the butter, change the receiver, without luting the junctures; and increase the fire until the retort becomes intensely red-hot: in an hour or two the whole of the black powder will be sublimed, and its colour changed into red. Then break the retort, and diligently separate the cinnabar, which will be found in the neck, from the black drossy matter.

THE cinnabar of antimony is composed of the sulphur of the antimony, and the mercury of the sublimate, which are perfectly the

same with the common brimstone and quicksilver, of which the *cinnabaris falsitia* is made. The antimonial cinnabar therefore, whose ingredients are laboriously extracted from other substances, is not different from the common cinnabar made with the same materials, procured at a much cheaper rate. The former indeed is generally of a darker colour than the other, and has somewhat of a needled appearance, like that of antimony itself; from whence it has been supposed to participate of the metallic part of that mineral. But it appears from experiment, that both the colour and needled form are entirely accidental, and owing to the mixture containing a larger proportion of sulphur, and being sublimed in a more languid manner.

MERCURIUS VITÆ, seu PULVIS ALGEROTHI.

Mercury of life, or Algeroth's powder.

Take of

Rectified butter of antimony, as much as you please.

Pour to it a sufficient quantity of spring water, and an exceeding white powder will be precipitated; edulcorate this by repeated affusions of warm water, and dry it by a slow fire.

THIS powder has not, as its name should seem to imply, any thing of mercury in it; but is solely composed of the reguline part of the antimony, corroded by the acid spirit of sea-salt; which acid is so closely united, as not to be separated by any ablution with water. Le Mort directs some alkaline salt to be dissolved in the water, in order to obtund the acid: Several other methods also have been contrived for correcting and abating the force of this violent emetic; but they either leave

leave it still virulent, or render it inert. It has therefore for a long time been laid aside by practitioners. The Edinburgh College have lately received a process of this kind as subservient to the preparation of emetic tartar.

BEZOARDICUM MINE- RALE.

Bezoar mineral.

Take any quantity of butter of antimony newly rectified, and gradually drop into it spirit of nitre till the effervescence ceases. Draw off the spirit in a glass vessel, placed in a sand-heat, till a dry powder remains behind: add to this a little fresh spirit of nitre, and again exsiccate it. Repeat this a third time; then commit the powder in a crucible to a naked fire till it has received an almost white heat, and detain it in this state for half an hour.

This preparation may be easier made, and with greater safety to the operator, by dropping the butter of antimony into three or four times its weight in spirit of nitre, and distilling the mixture in a retort, until a dry white mass is left behind, which is afterwards to be calcined, as above directed. It may likewise be made by distilling spirit of nitre from the mercurius vitæ, and calcining the remainder; or by deflagrating the mercurius vitæ with thrice its weight of pure nitre. This last method, proposed by Wedelius, is followed by the Augustan College.

Bezoar mineral was formerly held in great esteem as a diaphoretic; but its reputation is at present almost lost. It is not different in medical virtue, or in any sensible quality, from the calces of antimony made directly by deflagration with nitre; some of which have generally supplied its place in the shops. It

appears at first pretty extraordinary, that the violent caustic butter of antimony should be rendered indolent by the corrosive spirit of nitre. How this happens will be easily understood, upon considering, that the nitrous acid expels the marine (to which the caustic quality of the butter is owing), and is itself expelled from most metallic substances by fire.

TARTARUM EMETICUM.

Emetic tartar.

Lond.

Take of

Washed crocus of antimony,
Crystals of tartar, each half a
pound;
Water, three pints.

Boil them together for half an hour; then filtre the liquor, and after due evaporation set it by to crystallise.

Edinb. +

Take of

Cream of tartar, four ounces;
Glass of antimony, powdered,
two ounces.

Boil them together in six pints of water for ten hours, stirring them frequently with a spatula, and adding more water as there is occasion. Filtre the liquor while warm, and evaporate it either to dryness, or only till a pellicle forms, that it may shoot into crystals.

It may likewise be prepared in the same manner from the *Crocus metallorum* washed.

Take of

Antimonial caustic what quantity
you please.

Infuse it in warm water in which purified fixed vegetable alkali alone hath been previously dissolved, that the antimonial powder may be precipitated; which after

N n 3

being

of antimony was added in the distillation of spirit of sea-salt without water, a solution would also be made.

When the congealed matter that arises into the neck of the retort is liquefied by the moisture of the air, it proves less corrosive than when melted down and rectified by heat; though it seems, in either case, to be sufficiently strong for the purposes it is intended for, as the consuming of fungous flesh and the callous lips of ulcers. It is remarkable, that though this saline concrete readily and almost entirely dissolves by the humidity of the air, only a small quantity of white powder separating, it nevertheless will not dissolve on putting water to it directly: even when previously liquefied by the air, the addition of water will precipitate the solution.

CINNABARIS ANTIMONII.

Cinnabar of antimony.

Lond.

Let the matter, which remains in the retort after the distillation of the caustic, be sublimed in a coated matrafs, in an open fire.

Edinb. +

As soon as red vapours begin to appear in the distillation of the butter, change the receiver, without luting the junctures; and increase the fire until the retort becomes intensely red-hot: in an hour or two the whole of the black powder will be sublimed, and its colour changed into red. Then break the retort, and diligently separate the cinnabar, which will be found in the neck, from the black drossy matter.

THE cinnabar of antimony is composed of the sulphur of the antimony, and the mercury of the sublimate, which are perfectly the

same with the common brimstone and quicksilver, of which the *cinnabaris factitia* is made. The antimonial cinnabar therefore, whose ingredients are laboriously extracted from other substances, is not different from the common cinnabar made with the same materials, procured at a much cheaper rate. The former indeed is generally of a darker colour than the other, and has somewhat of a needled appearance, like that of antimony itself; from whence it has been supposed to participate of the metallic part of that mineral. But it appears from experiment, that both the colour and needled form are entirely accidental, and owing to the mixture containing a larger proportion of sulphur, and being sublimed in a more languid manner.

MERCURIUS VITÆ, seu PULVIS ALGEROTHI.

Mercury of life, or Algeroth's powder.

Take of

Rectified butter of antimony, as much as you please.

Pour to it a sufficient quantity of spring water, and an exceeding white powder will be precipitated; edulcorate this by repeated affusions of warm water, and dry it by a slow fire.

THIS powder has not, as its name should seem to imply, any thing of mercury in it; but is solely composed of the reguline part of the antimony, corroded by the acid spirit of sea-salt; which acid is so closely united, as not to be separated by any ablution with water. Le Mort directs some alkaline salt to be dissolved in the water, in order to obtund the acid: Several other methods also have been contrived for correcting and abating the force of this violent emetic; but they either

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Lond.

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Crystals of tartar, each half a
pound;

Water, three pints.

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Edinb. +

Take of

Cream of tartar, four ounces;
Glass of antimony, powdered,
two ounces.

Boil them together in six pints of water for ten hours, stirring them frequently with a spatula, and adding more water as there is occasion. Filtre the liquor while warm, and evaporate it either to dryness, or only till a pellicle forms, that it may shoot into crystals.

It may likewise be prepared in the same manner from the *Crocus metallorum* washed.

'Take of

Antimonial caustic what quantity
you please.

Infuse it in warm water in which purified fixed vegetable alkali alone hath been previously dissolved, that the antimonial powder may be precipitated; which after

N n 3

bring

being well washed is to be exsiccated.

Then to five pounds of water, add of this powder nine drams, crystals of tartar, beat into a very fine powder, two ounces and a half; boil for a little till the powders are dissolved.

Let the strained solution be slowly evaporated in a glass vessel to a pellicle, so as crystals may be formed.

'We have retained the formula directed for this preparation in the former editions of the Edinburgh Pharmacopœia. The reason of this innovation, and which was first started by Mr Macquer, seems to have been a suspicion, that the degree of calcination suffered by the metal before its fusion must be various in different glasses of antimony. But we are not certain whether the transparency of the glass may not be taken for an equally sure test of the degree of calcination of the regulus, as the precipitation from an acid, and by an alkali, both of which must frequently differ, and considerably vary the process in the hands of different apothecaries. Whether the glass of antimony or this precipitated powder is employed, some attention is required in collecting the crystals, as some of them shoot which contain no metal. After they are all separated from the liquor, they ought to be beat together in a glass mortar into a fine powder, whereby the medicine may be of uniform strength.

'Emetic tartar is, of all other preparations of antimony, the most certain in its operation.

'It will be sufficient in considering the medicinal effects of antimonials, that we should observe, once for all, that their emetic property depends on two different conditions of the reguline part: the first is where the reguline part is only ac-

tive, by being rendered so from meeting with an acid in the stomach: the second is, where the reguline part is already joined with an acid, rendering it active. It is obvious, that those preparations, reducible to the first head, must always be of uncertain operation. Such, then, is the equal uncertainty in the chemical condition and medicinal effects of the croci, the hepata, and the calces; all of which processes are different steps or degrees of freeing the reguline part of sulphur and phlogiston. It is equally plain, that the preparations coming under our second head, must be always constant and certain in their operation. Such a one is emetic tartar, whose dose and effects we can measure with amazing exactness.'

The title of this medicine expresses its principal operation. It is one of the best of the antimonial emetics, acting more powerfully than the quantity of crocus contained in it would do by itself, though it does not so much ruffle the constitution. And indeed antimonials in general, when thus rendered soluble by vegetable acids, are more safe and certain in their effects than the violent preparations of that mineral exhibited by themselves; the former never varying in their action from a difference in the food taken during their use, or other like circumstances, which occasioning more or less of the others to be dissolved, make them operate with different degrees of force. Thus crude antimony, where acid food has been liberally taken, has sometimes proved violently emetic; whilst, in other circumstances, it has no such effect.

The dose of emetic tartar, when designed to produce the full effect of an emetic, is 'from two to four grains. It may likewise be advantageously given in much smaller doses, as a nauseating and sudorific medicine.'

SECT.

S E C T. IX.

PREPARATIONS OF BISMUTH.

THIS metal resembles in appearance the regulus of antimony, but differs greatly from it in its pharmaceutical properties and medical qualities. It melts in a very small heat, long before ignition; and totally dissolves, with great effervescence, in aquafortis, which only corrodes the antimonial metal. As a medicine, it seems, when pure, to have little or no effect; though some preparations of it were formerly accounted diaphoretic. At present, only one preparation comes under the notice of the apothecary or chemist, and that designed for external use.

MAGISTERIUM BISMUTHI.

Magistery of bismuth.

Dissolve bismuth in a proper quantity of aquafortis, without heat, adding the bismuth by little and

little at a time. Pour the solution into sixteen times its quantity of fair water; it will grow milky, and on standing for some time deposite a bright white precipitate: the addition of spirit of wine will expedite the precipitation. Wash the powder in fresh parcels of water, and dry it in a shady place betwixt two papers.

THIS preparation is of some esteem as a cosmetic, which is the only use it is now applied to. The diaphoretic virtues attributed to it when taken internally, have very little foundation, and by the present practice are not at all regarded. It was proposed to be received in our Pharmacopœia at the late revival, but was found much too insignificant to be admitted there.

S E C T. X.

PREPARATIONS OF ZINC.

THIS metal melts in a red heat; and, if the air is admitted, flames, and sublimes into light, white, and down flowers; if the air is excluded, it arises, by a strong fire, in its metallic form. Sulphur, which unites with, or scorifies all the other metals except gold, does not act on zinc. Acids of every kind dissolve it.

Zinc, its flowers or calces, and solutions, taken internally, prove strong and quick emetics: in small doses, they are said to be diaphoretic. Externally, they are cooling, astringent, and desiccative.

PURIFICATIO ZINCI.

Purification of zinc.

Melt zinc with a heat no greater than is just sufficient to keep it fluid. Stir it strongly with an iron rod, and throw in alternately pieces of sulphur and of tallow, the first in largest quantity. If any consistent matter, or scoria, forms on the top, take it off, and continue the process, until the sulphur is found to burn freely and totally away on the surface of the fluid zinc.

Zinc usually contains a portion
N n 4 of

of lead, which this process effectually separates. Sulphur united with lead forms a mass which does not melt in any degree of fire that zinc is capable of sustaining.

FLORES ZINCI.

Flowers of zinc.

Edinb.

Let a large crucible be placed in a furnace, in an inclined situation, only half upright; when the bottom of the vessel is moderately red, put a small piece of zinc, about the weight of two drams, into it. The zinc flames in a short time, and is at the same time converted into a spongy calx, which is to be raked from the surface of the metal with an iron spatula, that the combustion may be more complete; when the zinc ceases to flame, take the calx out of the crucible. Having put in another piece of zinc, the operation may be repeated as often as you please. Lastly, the calx is to be prepared like antimony.

THESE flowers are preferable for medicinal purposes to tutty, and the more impure sublimes of zinc, which are obtained in the brass works; and likewise to calamine, the natural ore of this metal, which

contains a large quantity of earth, and frequently a portion of heterogeneous metallic matter. The flowers of zinc, in doses from one to seven or eight grains, have been much celebrated of late years in the cure of epilepsy and several spasmodic affections; and there are sufficient testimonies of their good effects, where tonic remedies in those affections are proper.

VITRIOLUM ALBUM.

White vitriol.

Edinb.

Take of

Zinc, cut into small pieces, three ounces;

Vitriolic acid, five ounces;

Water, twenty ounces.

Having mixed the acid and water, add the zinc, and when the ebullition is finished strain the liquor; then after proper evaporation set it apart in a cold place, that it may shoot into crystals.

THIS salt is an elegant white vitriol. It differs from the common white vitriol, and the *sal vitrioli* of the shops, only in being purer, and perfectly free from any admixture of copper, or such other foreign metallic bodies as the others generally contain.

S E C T. XI.

COMPOUND METALLIC PREPARATIONS.

LAPIS MEDICAMENTOSUS.

The medicinal stone.

Lond.

TAKE of

Litharge,

Bole armenic, or French bole,

Alum, each half a pound;

Colcothar of green vitriol, three ounces;

Vinegar, a quarter of a pint.

Mix and dry them till they grow hard.

THIS preparation is employed externally as an astringent, for fastening loose teeth, preserving the gums, healing and drying up ulcers and wounds, and repressing defluxions of thin acrid humours upon the eyes. It is sometimes used in injections for

for checking a gonorrhœa, after the virulence is expelled. A preparation much resembling this is said, in the Memoirs of the French academy, to be greatly esteemed among the surgeons in the army as a vulnerary.

**SPECIFICUM ADSTRINGENS
MAETZII.**

An astringent preparation taken from Maetz, which has been sold under the name of

Colbatch's styptic powder.

Take any quantity of iron filings, and as much spirit of salt as will rise above them three or four inches. Digest them together with a gentle heat till the spirit ceases to act on the metal; then pour off the liquor, evaporate it to one half, and add thereto an equal weight of sugar of lead. Continue the evaporation, with a small heat, until the matter remains dry, and assumes a red colour.

If the process is stopt as soon as it becomes dry, it has exactly the appearance of Colbatch's powder. It must be kept close from the air, otherwise it deliquesces.

THIS is said to be the styptic with which so much noise was made some time ago, by the author of the *Novum lumen chirurgiæ*, and for the sale of which a patent was procured: only in that was used oil of vitriol, instead of the spirit of salt in this; a difference not very material. The preparation stands recommended in all kinds of hæmorrhagies and immoderate fluxes, both internally and externally; the dose is from four grains to twelve. It is undoubtedly an efficacious styptic, but for internal use a dangerous one. See the article **LEAD**, and its *Preparations*.

ANTIHECTICUM POTERII.

Poterius's antihæctic.

Take of

Martial regulus of antimony, six ounces;

Fine tin, three ounces.

Melt these together in a crucible; then pour them out into a warm greased mortar, and when the mass is grown cold, grind it into a powder. Add to this thrice its weight of pure nitre, and deflagrate the mixture in a crucible, throwing in only a spoonful at a time; then calcine it [that is, keep it in fusion] for an hour; and having afterwards ground it into an impalpable powder, pour thereon a sufficient quantity of warm water: stir them well together with a pestle, till the water grows milky; which, thus loaded with the finer parts of the powder, is to be poured off; and fresh water put to the remainder: repeat this operation till nothing but indissoluble feces remain behind. Suffer all the milky liquors to rest; a powder will fall to the bottom, which is to be washed with repeated affusions of warm water, and lastly dried for use.

THE regulus of antimony should be melted before the tin is added to it; for if they both are put into the crucible together, a part of the tin will be dissipated by the heat requisite for the fusion of the regulus.

The chemists have been greatly divided with regard to the proportion which these two ingredients ought to bear to one another. Some vary so much from the above prescription, as to order two parts of the antimonial regulus to one of tin; others no more than one part of the former to six of the latter. Nor have they agreed upon the colour which this preparation ought to have; some preferring that which is perfectly

fectly white; whilst others look upon a blueish tinge as a mark of the proportions having been duly observed, and the operation regularly performed: in the process above, it seems intended to be white; for without the observance of certain encheireses, not there mentioned, as particularly calcining the powder after the ablution, it will scarce have any thing of a blueish cast.

Practical physicians do not differ less in the accounts which they give of the virtues of this celebrated medicine. Some extol it as an excellent diaphoretic, &c. others are ready to vouch, that it has done most eminent service in hecical cases; whilst many, of no small note, are not only confident that it has none of the virtues attributed to it, but utterly condemn it as unsafe, and capable of producing the very disorders said to be remedied by its use. This affair probably will not be satisfactorily determined till the virtues of *calx of tin* and *calx of antimony* (which this medicine is a mixture of) shall be better ascertained than they are at present. In the mean time, the use of the *antihetic* is in common practice laid aside; and is not likely to be ever introduced again.

BEZOARDICUM JOVIALE.

Bezoar with tin.

Take of

Regulus of antimony, three ounces;

Pure tin, two ounces;

Corrosive sublimate mercury, five ounces;

Melt the regulus of antimony in a crucible, and put to it the tin, so as to make a new regulus; to which, after being levigated, add the corrosive sublimate, and distil the mixture in a retort. Let the butter which arises in this process be fixed by three repeated

distillations with thrice its own quantity of spirit of nitre. The powder is then to be calcined; thrown, whilst ignited, into a proper quantity of spirit of wine, and afterwards dried for use.

THIS preparation is not greatly different from the foregoing. The butter seems to contain more of the tin than of the antimonial regulus, united with the marine acid of the sublimate: the nitrous spirit expels the marine, and is itself afterwards expelled in the calcination; leaving the powder a mere calx, similar to one prepared from the same ingredients in a less troublesome manner, by deflagration with nitre.

ÆTHIOPS ANTIMONIALIS.

Antimonial ethiops.

Let equal quantities of antimony and sea salt be melted together in a crucible for an hour; when grown cold, a regulus (improperly so called) will be found in the bottom; which is to be separated from the scorix that lie above it, and ground with an equal weight of purified quicksilver until they are united.

THIS medicine is said to be of remarkable efficacy in venereal cases of long standing, in cancerous tumours, scorbutic and scrophulous disorders, obstinate glandular obstructions, and sundry other chronic distempers which elude the force of the common medicines. A few grains may be given at first; and the dose gradually increased according to its operation, to a scruple or more. It acts chiefly by promoting perspiration: in some constitutions, it proves purgative; and in others, if the dose is considerable, emetic.

Sundry other preparations of this kind have of late been held by some people in considerable esteem, tho' not

not taken notice of by common practice. They have been generally composed of mercury united by triture either with crude antimony, the medicinal regulus, or the golden or precipitated sulphur.

Mr Malouin, of the faculty of Paris, made trial of different methods for uniting mercury and crude antimony into an ethiops. Those which succeeded, I shall here extract from his *Chémie Medicinale*.

On grinding together two parts of antimony and one of mercury, the mercurial globules disappeared in three hours, and the compound proved similar in appearance to the ethiops made with the same proportions of mercury and common sulphur. Equal parts of the antimony and mercury were much more difficultly united, requiring the triture to be continued for two days; tho' it was found also, even with these proportions, that when the mercury was added, not all at once, but by little and little, the union might be effected in five hours. As common ethiops is made more perfect, in regard to the intimate union of the ingredients, by heat than by triture; the most perfect antimonial ethiops also was obtained by means of fire in the following manner:

A heated crucible is to be rubbed in the inside with tallow, immediately covered, and set in the fire. When red-hot, throw in the antimony beaten into coarse pow-

der, and cover the vessel again. When the antimony is melted, take the crucible out of the fire, throw in a small bit of tallow, pour an equal weight of heated mercury on different parts of the surface, cover the crucible for a moment, and, while the mixture is still fluid, pour it out into a heated iron mortar. When grown cold, reduce it into a powder, which is be levigated on a marble.

On this black powder the author directs some spirit of wine to be burnt two or three times; an article which may very safely be omitted, as it can nowise affect the medicine. The only difficulty in the process relates to the degree of heat of the melted antimony: if it is not sufficiently fluid, the mercury cannot equally unite with it; and if over hot, great part of the mercury will be dissipated.

Mr Malouin commends this ethiops as a medicine of great efficacy in glandular obstructions, obstinate cutaneous maladies of different kinds, inveterate rheumatisms, &c. It acts most commonly by urine and perspiration, rarely purges, or occasions only some slight nausea. The dose is from one grain to twenty, two or three times a-day, that is, from one to sixty grains in a day. In some persons a dram has no sensible operation; others are moved by six grains.

PART IV.

Medicinal Compositions.

CHAP. I.

POWDER S.

THIS form receives such materials only as are capable of being sufficiently dried to become pulverable, without the loss of their virtue. There are many substances, however, of this kind, which cannot be conveniently taken in powder: bitter, acrid, fetid drugs, are too disagreeable: emollient and mucilaginous herbs and roots are too bulky: pure gums cohere, and become tenacious in the mouth; fixt alkaline salts liquefy upon exposing the composition to the air; and volatile alkalis exhale. 'Many of the aromatics, too, suffer a greater loss of their odorous principle when kept in powder; as in that form they no doubt expose a much larger surface to the air.'

The dose of powders, in extem-

poraneous prescription, is generally about half a dram: it rarely exceeds a whole dram; and is not often less than a scruple. Substances which produce powerful effects in smaller doses are not trusted to this form, unless their bulk is increased by additions of less efficacy: those which require to be given in larger ones, are better fitted for other forms.

The usual vehicle for taking the lighter powders in, is any agreeable thin liquid. The ponderous powders, particularly those prepared from metallic substances, require a more consistent vehicle, as syrups; for from thin ones they soon subside. Resinous substances likewise are most commodiously taken in thick liquors: in thin ones, they are apt to run into lumps, which are not easily again dissoluble.

General

General rules for making powders.

I.

Particular care ought to be taken that nothing carious, decayed, or impure, be mixed in the composition of powders: the stalks and corrupted parts of plants are to be separated [E.] +

II.

The dry aromatics ought to be sprinkled, during their pulverisation, with a few drops of any proper water [E.] +

III.

The moiſter aromatics may be dried with a very gentle heat, before they are committed to the mortar [E.] +

IV.

Gums, and ſuch other ſubſtances as are difficultly pulverable, ſhould be pounded along with the drier ones, that they may paſs the ſieve together [E.] +

V.

No part ſhould be ſeparated for uſe, until the whole quantity put into the mortar has paſſed the ſieve, and the ſeveral ſiftings been mixed together; for thoſe parts of one and the ſame ſubject, which powder firſt, may prove different, at leaſt in degree of efficacy, from the reſt.

VI.

Powders of aromatics are to be prepared only in ſmall quantities at a time, and kept in glaſs veſſels very cloſely ſtopped [E.] +

If powders are long kept, and not carefully ſecured from the air, their virtue is in great meaſure deſtroyed, although the parts in which it conſiſts ſhould not in other circumſtances prove volatile. Thus, though the virtues of ipecacuanha are ſo fixt as to remain entire even in extracts made with proper menſtrua, yet, as the college of Wirtemberg obſerves, if the powdered root be expoſed for

a length of time to the air, it loſes its emetic quality.

PULVIS ANTILYSSUS.

Powder againſt the bite of a mad dog.

L. E. +

Take of

Aſh-coloured ground liverwort,
two ounces;

Black pepper, one ounce.

Beat them together into a powder.

In our former Pharmacopœia, the quantity of pepper was equal to that of the herb; which rendering the powder greatly too hot, the above diminution of it became neceſſary. The virtue which this medicine has been celebrated for, is expreſſed in its title; the doſe is a dram and a half, to be taken in the morning faſting, in half a pint of cows milk warm, for four mornings together. See page 169.

PULVIS ARI COMPOSITUS.

Compound powder of arum.

Lond.

Take of

Arum root, freſh dried, two
ounces;

Yellow water-flag roots,

Burnet ſaxifrage roots, each one
ounce;

Crabs-eyes prepared,

Cinnamon, each half an ounce;

Salt of wormwood, two drams.

Beat them into a powder, which is to be kept in a cloſe veſſel.

In former editions of the London Pharmacopœia, one of the ingredients in this compoſition was called *Acorus vulgi* or *vulgaris*; a name which has been applied, by different writers, both to *calamus aromaticus*, and to the *gladiolus luteus* or common yellow water-flag. In this uncertainty, the compounders generally took the former. But as the medicine

medicine was first contrived by a German physician, Birkmann, and as in some of the German pharmacopœias the *acorus vulgaris* is explained to be the water-flag, the London College have now, rather in conformity to the original prescription, than from any opinion of the virtues of the water-flag (which appear, when the root is dried and powdered, to be very inconsiderable) made choice of this last, and expressed it by the name which more clearly distinguishes it from the other. The caution of keeping the powder in a close vessel is a very necessary one; for if exposed to the air, the alkaline salt, imbibing moisture from it, would run into a liquid state. Two alkaline salts have been generally directed; but as they differ from one another only in name (see page 439.), one of them is here justly omitted, and supplied by a proportionable increase of the other. Possibly the prepared crabs-eyes might also have been dropt, unless they are intended to augment the volume of the medicine (an intention not very necessary in this composition), for they do not appear to have any medicinal virtue which alkaline salts do not possess in a greater degree.

Agreeably to the above remark in a former edition of this book, the College of Edinburgh, in a revival of their Pharmacopœia, had omitted the crabs-eyes, and continued the former practice of using *calamus aromaticus* for the *acorus vulgaris*. They had likewise exchanged the cinnamon for the canella alba; and the alkaline salt for a neutral one, better suited to the form of a powder. Their formula was as follows:

Take of

Arum roots, newly dried, two ounces;
Calamus aromaticus,

A

Burnet saxifrage roots, each one ounce;

Canella alba, six drams;

Vitriolated tartar, two drams.

Mix and make them into a powder.

THE *pulvis ari compositus* was originally intended as a stomachic; and in weaknesses and relaxations of the stomach, accompanied with a surcharge of viscid humours, it is doubtless a very useful medicine. It frequently also has good effects in rheumatic cases, of which I have known some instances: the dose may be from a scruple to a dram, two or three times a-day, in any convenient liquor. It should be used as fresh as possible, for its virtue suffers greatly in keeping: the arum root in particular, its capital ingredient, soon loses the pungency, in which its efficacy principally consists.

PULVIS e BOLO

COMPOSITUS sine OPIO.

Compound powder of bole without opium.
Lond.

Take of

Bole armenic, or French bole, half a pound;

Cinnamon, four ounces;

Tormentil root,

Gum arabic, each three ounces;

Long pepper, half an ounce.

Reduce these ingredients into powder.

PULVIS e BOLO

COMPOSITUS cum OPIO.

Compound powder of bole with opium.
Lond.

Take of opium strained, three drams.

Dry it a little, so as to render it easily pulverable; and add to it the foregoing species, that they may all beat into a powder together.

THIS

THIS powder, with opium, is a reform of the species of Fracastorius's confection, commonly called *diacordium*; consisting only of such of the ingredients of that composition as are most conducive to the intention for which it is at present prescribed. Forty-five grains of the powder contain one of opium.

The powder is directed to be kept in the shops without opium, for cases where the assistance of that drug is not wanted. It is a warm, glutinous astringent; and is given in fluxes, or other disorders, where medicines of this class are proper, in doses of a scruple or half a dram.

**PULVIS e CERUSSA.
COMPOSITUS.**

*Compound powder of cerusse.
Lond.*

Take of

Cerusse, five ounces;

Sarcocolla, an ounce and a half;

Gum tragacanth, half an ounce.

Beat them together into a powder.

THIS composition is the *trochisci albi* of Razi, brought back to its original simplicity with regard to the ingredients, and without the needless trouble of making it into troches. It is employed for external purposes, as in collyria, lotions, and injections, for repelling acrimonious humours; and in inflammations.

**PULVIS e CHELIS
CANCROCORUM COMPOSITUS.**

*Compound powder of crabs-claws.
Lond.*

Take of

The tips of crabs-claws prepared, one pound;

Pearls prepared,

Red coral prepared, each three ounces.

Mix them together.

Edinb. +

Take of

Red coral prepared, one ounce;

Black tips of crabs-claws prepared, two ounces.

Mix them together.

THESE powders have lost several of their ingredients, without any injury to their virtues; and possibly they would still bear a farther reduction; for both the crabs eyes and claws are by themselves at least as effectual, as any composition of them with pearls and coral. In some of our hospitals, the following composition is substituted.

**PULVIS TESTACEUS
COMPOSITUS.**

Compound testaceous powder.

Take of

Oyster-shells prepared, one pound;

White chalk, half a pound.

Mix them together.

THIS cheap absorbent powder is at least equally valuable, as a medicine, with the more costly and compounded crabs-claw and bezoardic powders of the shops. These kinds of preparations are given from half a scruple to half a dram, for absorbing or destroying acidities in the first passages; which seems to be the only good effect that can be reasonably expected from these simple antacid earths. If they meet with no acid to dissolve them, they promise to be injurious rather than beneficial (see page 85.) They have often been given in fevers, under the notion of alexipharmacs and sudorifics, from a supposition that these disorders are occasioned by a latent acid; and, though this theory is now exploded, the practice built upon it is, in good measure, still continued. So far are absorbents from being useful in these cases, that substances of a directly con-

contrary quality, mild acidulous liquors, are in general the most successful remedies, wherever the vis vitæ is not too far depressed; and where it is, the insipid indolent earths can contribute nothing to support or raise it.

It may here be proper to take notice of a quality hitherto little expected from these kinds of substances; that of strongly promoting putrefaction. Flesh mixed with a small proportion of chalk, and exposed to a heat equal to that of the human body, not only corrupts sooner than without this addition, but likewise in a far greater degree, resolving in a few days into a perfect mucus. This quality of the absorbent powders (for the discovery of which, with many other curious experiments on the same subject, the public is obliged to the ingenious Dr Pringle), seems to forbid their use in all those kinds of fevers where the animal juices are already too much disposed to a putrefactive state. We have above observed, that, in these cases, though very frequently employed, they are at best unserviceable; perhaps their ill effects would be oftener seen, if it was not for the quantity of acids usually given in acute diseases.

The most eligible formula for this kind of powder, is the following:

PULVIS CRETACEUS.

Chalk powder.

Edinb.

Take of

White chalk prepared, four ounces;

Nutmeg, half a dram;

Cinnamon, one dram.

Mix and make them into a powder; which may supply the place of the *cardialgic troches*.

THE addition of the aromatics in

the above formula, coincides with the general intention of the remedy which is indicated for weakness and acidity in the stomach.

PULVIS BEZOARDICUS.

Bezoardic powder.

Lond.

Take of

Compound powder of crabs-claws, one pound;

Oriental bezoar prepared, one ounce.

Mix them together.

BEZOAR has hitherto been an ingredient in the foregoing composition, which was then called Gascogne's powder; though notwithstanding the addition which this article made to the price, it added nothing to the virtue of the medicine. The College of London has therefore very prudently directed an absorbent powder without this costly article; and composed another, distinguished by its name, for the use of those who expect any particular virtues from it. The Edinburgh College have entirely expunged this unnecessary drug; and take no farther notice of it in their Pharmacopœia, than barely giving it a place in the catalogue of simples.

PULVIS CONTRAYERVÆ COMPOSITUS.

Compound powder of contrayerva.

Lond.

Take of

Compound powder of crabs-claws, a pound and a half;

Contrayerva root, five ounces.

Make them into a powder.

Edinb. +

Take of

Contrayerva root, six drams;

Virginian snakeroot, two drams;

English saffron, on dram;

3

Com.

Compound powder of crabs-claws,
two ounces.
Make them into a powder.

THESE powders were formerly directed to be made up into balls with water, (and then called LAPIS CONTRAYERVÆ); a piece of trouble now laid aside as needless, for it was necessary to reduce the balls into powder again before they could be used. Nor did that form contribute, as has been imagined, to their preservation; for it is scarce to be supposed, that the powder will lose more by being kept for a reasonable length of time in a close-stopt glass, than the balls will, in the humectation with water, and exsiccation in the air, before they are fit for being put by to keep. These medicines have a much better claim to the title of an alexipharmac and sudorific than the two foregoing compositions. The contrayerva, snakeroot, and saffron, by themselves are such, and prove very serviceable in low fevers, where the vis vitæ is weak, and a diaphoresis to be promoted. It is possible, that the crabs-claw powders are of no farther service than as they divide these powerful ingredients, and render them supportable to the stomach.

PULVIS ad EPILEPTICOS
de GUTTETA dictus.

Epileptic powder.
Edinb. +

Take of

Wild valerian root,
Peony root, of each equal parts.
Make them into a powder.

THIS powder has undergone a great reduction of its ingredients, to its advantage as a medicine; the articles rejected being either insignificant, or at best far inferior to those retained, and consequently increasing the bulk of the composition,

without communicating a proportionable share of efficacy. Perhaps, for the same reason, the peony roots are not altogether unexceptionable. The powder, however, as now reformed, may be looked on as a medicine of some importance for the purposes expressed in its title; far superior to those of similar intention in other pharmacopœias. The dose is from ten grains to half a dram for children, and from half a dram to two drams for adults. The absorbent powders, generally directed in these kinds of compositions, are here more prudently omitted, as they may easily be mixed extemporaneously, where particular cases may require them. For children, these additions are often necessary, as in most of their disorders acidities in the first passages have a considerable share: in adults, they are rarely of use.

PULVIS e MYRRHA
COMPOSITUS.

Compound powder of myrrh.
Lond.

Take of

Rue leaves, dried,
Dittany of Crete,
Myrrh, each an ounce and a half;
Asafetida,
Sagapenum,
Ruffia castor,
Opoponax, each one ounce.
Beat them together into a powder.

THIS is a reformation of the *trochisci e myrrha*, a composition contrived by Razi against uterine obstructions. It may be taken in any convenient vehicle, or made into boluses, from a scruple to a dram or more, two or three times a-day.

PULVIS ad PARTUM.

Powder to promote delivery.
Edinb. +

Take of

Borax, half an ounce,
O o Castor,

Castor,
Saffron, each a dram and a half;
Oil of cinnamon, eight drops.
Oil of amber, six drops.

Beat the species together into a powder, to which add the oils, and mix the whole well together.

THIS medicine has long been held in esteem for the purpose expressed in its title: nevertheless its real efficacy, and what share thereof is owing to each of the ingredients, has not been sufficiently determined. The dose is from a scruple to a dram, or so much as can be conveniently taken up at once on the point of a knife. It should be kept in a very close vessel, otherwise it will soon lose a considerable deal of its more valuable parts. 'It is not, however, probable that any substances of this kind are by any means equal to wine, opium, and less complicated remedies. Nor do we think that any substance in nature deserves such a general title as is given to this trifling powder. The impediments to delivery must depend on a variety of circumstances, to obviate which, an equal variety of remedies is required. Such a general title to any one remedy, might therefore do much harm with empirical people, by leading the more timid to an inert and trifling, and the bold to a severe and baneful practice.'

PULVIS e SCAMMONIO COMPOSITUS.

Compound powder of scammony.
Lond.

Take of
Scammony, four ounces;
Calcined hartshorn prepared, three ounces;
Grind them diligently together into a powder.

HERE the scammony is divided by the earthy calx, and thus ren-

dered somewhat more soluble, and less adhesive; hence its purgative quality is promoted at the same time that it becomes less griping. The dose of the compound is from fifteen grains to half a dram.

This powder has been usually prepared with diaphoretic antimony and crystals of tartar (instead of the calcined hartshorn above directed) and called from its first publisher, PULVIS CORNACHINI; which, in 'a former edition of' the Edinburgh Pharmacopœia, was thus directed:

Take of

Diaphoretic antimony,
Cream of tartar,
Scammony, each equal parts.
Make them into a powder.

THIS may be given to the quantity of a dram or more. In other prescriptions, the tartar and antimonial calx bear nearly the same proportion to the scammony, as the calcined hartshorn in the preceding formula. It appears probable, that neither of these ingredients are of any farther use, than as they divide the texture of the scammony; tho' Cornachini proposes notable advantage from some deobstruent quality in the tartar, whereby the vessels shall be opened, and the noxious humours prepared for expulsion; and from the preparation of antimony, though it have no sensible operation, he expects some share of the same success, which sometimes attends the rougher preparations of that mineral.

'In the present edition of the Edinburgh Pharmacopœia, this preparation stands thus:

'Take of
Scammony,
Crystals of tartar, of each two ounces.
Mix, and grind them diligently into a powder.'

PUL-

**PULVIS e SENA
COMPOSITUS.**

*Compound powder of senna.
Lond.*

Take of

Crytals of tartar,
Senna, each two ounces;
Scammony, half an ounce;
Cloves,
Cinnamon,
Ginger, each two drams.

Powder the scammony by itself; and
all the other ingredients together;
then mix them.

PULVIS DIAENNÆ.

Edinb. +

Take of

Cream of tartar,
Senna, each two ounces;
Scammony,
Ginger, each half an ounce.

Make them into a powder.

THESE powders are given as ca-
thartics, in the dose of two scruples,
or a dram. The spices are added,
not only to divide, but to warm the
medicine, and make it sit easier on
the stomach. The scammony is used
as a stimulus to the senna; the
quantity of the latter necessary for
a dose, when not assisted by some
more powerful material, being too
bulky to be conveniently taken in
this form.

**PULVIS STERNUTATO-
RIUS.**

*Sternutatory powder.
Lond.*

Take of

Afarum,
Marjoram,
Marum Syriacum leaves, dried,
Lavender flowers, dried, each
equal weights.

Rub them together into a pow-
der.

**PULVIS STERNUTATO-
RIUS, five CEPHALICUS.**

*Sternutatory, or Cephalic powder.
Edinb.*

Take of

The leaves of afarum, three parts;
Marjoram, one part.

Beat them together into a powder.

THE titles of these powders suffi-
ciently express their intention. They
are both agreeable and efficacious
errhines, and superior to most of
those usually sold under the name of
herb snuff.

PULVIS STYPTICUS.

*Styptic powder.
Edinb.*

Take of

Alum, an ounce and a half;
Gum kino, three drams.

Grind them together into a fine
powder.

IN former editions of this Phar-
macopœia, a powder of this kind
was directed to be made with alum
and dragon's blood, and was long
in repute as an astringent; under the
title of *Pulvis stypticus Helvetii*.
The gum kino is judiciously substi-
tuted to the dragon's blood, as be-
ing a much more powerful and cer-
tain astringent. The chief use of
this powder is in hæmorrhagies, e-
specially of the uterus.

**PULVIS e SUCCINO
COMPOSITUS.**

*Compound powder of amber.
Lond.*

Take of

Amber prepared,
Gum arabic, each ten drams;
Juice of hypocistis,
Balaustines,
Japan earth, each five drams;
Olibanum, half an ounce;
Strained opium, one dram.

Beat them together into a powder.

THIS powder is composed of the more unexceptionable ingredients of the *TROCHISCI E CARABE* of our former Pharmacopœia. The articles omitted, which are as many in number as those now retained, were manifestly absurd or superfluous; and the making it up into troches a very unnecessary trouble. The medicine, as now reformed, may be looked upon as a tolerably elegant astringent; though possibly the ingredient, which it receives name from, contributes little to its virtue. Two scruples of the composition contain one grain of opium.

**PULVIS e TRAGACANTHA
COMPOSITUS.**

*Compound powder of gum tragacanth.
Lond.*

Take of

Gum tragacanth,
Gum arabic,
Marshmallow root, each an ounce
and a half;
Starch,
Liquorice, each half an ounce;
Double - refined sugar, three
ounces.

Grind them into a powder.

**PULVIS DIATRAGACAN-
THI.**

Edinb. +

Take of

Gum tragacanth, one ounce and
a half;
Marshmallow root,
Liquorice,
Starch, each half an ounce.

Beat them together into a powder.

BOTH these powders are mild emollients; and hence become serviceable in hectic cases, tickling coughs, strangury, some kinds of alvine fluxes, and other disorders proceeding from a thin acrimonious state of the humours, or an abrasion of the mucus of the intestines: they

soften, and give a greater degree of consistency to the former; and defend the latter from being irritated or excoriated by them. All the ingredients coincide in these general intentions; the marshmallow root, however, is somewhat too bulky for this form, and likewise subjects the composition to grow mouldy in keeping, an inconvenience which the cold seeds formerly employed in these powders were particularly liable to. The dose is from half a dram to two or three drams, which may be frequently repeated,

HIERA PICRA.

Lond.

Take of

The gum extracted from Socotrine aloes, one pound;
Canella alba, three ounces.

Beat them separately into powder, and then mix them together.

Pulvis HIERA PICRA dictus.

Edinb. +

Take of

Socotorine aloes, four ounces;
Virginian snakeroot,
Ginger, each half an ounce.

Mix, and beat them into a powder.

THESE compositions were originally directed to be made into an electary: with us, they have been rarely used in that form, and not often in this of a powder, on account of their great nauseousness. They are chiefly employed as the basis of a tincture called *Tinctura sacra*. See page 311.

SPECIES AROMATICÆ.

Aromatic species.

Lond.

Take of

Cinnamon, two ounces;
Lesser cardamom seeds, husked,
Ginger,
Long pepper, each one ounce.

Beat them together into a powder.

PUL-

PULVIS DIAROMATON, five SPECIES AROMATICÆ.*Aromatic powder, or Aromatic species.
Edinb.*

Take of

Nutmegs,
Lesser cardamom seeds,
Ginger, of each two ounces.Beat them together into a powder,
to be kept in a phial well shut.

BOTH these compositions are agreeable, hot, spicy medicines; and as such may be usefully taken in cold phlegmatic habits and decayed constitutions, for warming the stomach, promoting digestion, and strengthening the tone of the viscera. The dose is from ten grains to a scruple and upwards. The first is considerably the warmest.

SPECIES e SCORDIO sine OPIO.*Species of scordium without opium.
Lond.*

Take of

Bole armenic, or French bole, four ounces;
Scordium, two ounces;
Cinnamon, an ounce and a half;
Storax strained,
Tormentil root,
Bistort root,
Gentian,
Dittany of Crete,
Galbanum strained,
Gum Arabic,
Red roses, each one ounce;
Long pepper,
Ginger, each half an ounce.

Reduce them into powder.

SPECIES e SCORDIO cum OPIO.*Species of scordium with opium.
Lond.*

Take of strained opium, three drams.

Dry it a little, that it may easily

pulverize; and add it to the foregoing species in the beating, that they may be all reduced into a powder together.

THIS is the species of Fracastorius's confection or diascordium, which has been hitherto kept in the shops in the form of an electary only, but is now judiciously directed in that of a powder also, both with and without the opium; when made into an electary, the medicine, in keeping, loses of its astringency, in which consists great part of its virtue. As this composition has in common practice been looked upon as a medicine of great consequence, and its effects determined by long experience; the College has made no farther alteration in its ingredients, than substituting red roses themselves to the sugar of roses, omitting sorrel seeds, which are certainly insignificant, and supplying the Lemnian earth, which with us is scarce ever met with genuine, by a proper increase of the bole. They have nevertheless given an elegant reformation of it, in the *pulvis e bolo, cum et sine opio*; there, the scordium, storax, gentian, dittany, ginger, and galbanum, are rejected, as being either superfluous or contrary to the intention; whilst an increase of the tormentil root amply supplies the loss of the bistort and roses. The quantity of opium is the same in both, viz. one grain in forty-five of the composition.

PULVIS TESTACEUS CERATUS.*Cerated testaceous powder.
Edinb. +*

Melt some yellow bees-wax over a gentle fire; and carefully stir into it, by little and little, as much of the compound powder of crabs-claws as the wax will take up.

THIS preparation, made with oystershells instead of the crabs-claw powder, was in use formerly in the Edinburgh infirmary, and was thence received into the Pharmacopœia of the College. It is given to the quantity of a dram, twice a-day, in diarrhoeas and dysenteries wherever the viscera are subject to be eroded by acrimonious humours, and in immoderate uterine discharges. Its virtue seems to depend wholly upon the wax, the earthy powder being of no farther use than to divide that concrete, and render it miscible with the animal fluids; though it may, in certain cases, do good, by absorbing acidity.

**PULVIS e JALAPPA
COMPOSITUS.**

*Compound powder of jalap.
Edinb.*

Take of
Jalap root, one ounce;
Crystals of tartar, two ounces.
Mix, and diligently grind them together for some time, so as to form a very fine powder.

THE use of the crystals in this preparation is the same as in that of the *Pulvis e scammonio compositus*, viz. to break down and divide the jalap into very minute particles, whereby its operation is thought to be meliorated.

**PULVIS SUDORIFICUS, five
DOVERI.**

*Sudorific, or Dover's powder.
Edinb.*

Take of
Vitriolated tartar, three drams;
Opium,
Root of ipecacuanha beat, of each one scruple.
Mix, and grind them accurately together, so as to make an uniform powder.

“THE vitriolated tartar, from the grittiness of its crystals, is perhaps better fitted for tearing and dividing the tenacious opium than any other salt; this seems to be its only use in the preparation. The operator ought to be careful that the opium and ipecacuanha shall be equally diffused through the whole mass of powder, otherwise different portions of the powder must have differences in degree of strength.”

“THIS powder is one of the most certain sudorifics that we know of; and as such, was recommended by Dr Dover as an effectual remedy in rheumatism. Modern practice confirms its reputation, not only in rheumatism, but also in dropsy, and sundry other diseases, where it is often difficult by other means to produce a copious sweat. The dose is from five to ten or twelve grains, according as the patient's stomach and strength bear it. It is convenient to avoid much drinking immediately after taking it, otherwise it is very apt to be rejected by vomiting before any other effects are produced.”

PULVIS ARTHRITICUS AMARUS.

*Bitter gout powder.
Parif.*

Take of
Gentian root,
Round birthwort root,
Rhapontic root.
Germander leaves,
Groundpine leaves,
Lesser centaury tops, of each equal parts.
Make them into a powder.

COMPOSITIONS of this kind were in use among the ancient Greek physicians, and made a considerable part of their practice in gouty and arthritic complaints. But while they bestow great praises on them in cold and

and phlegmatic constitutions, they very properly condemn them as being extremely hurtful in the hot and bilious. Afterwards, on account probably of the ill consequences arising from their indiscriminate use, these medicines fell into neglect, till the introduction of the Greek volumes into the western parts of Europe, when they were transcribed by some of the earlier medical writers, and brought into some esteem in Italy, Germany, Switzerland, &c. A form differing from the above only in the omission of the rhapontic root, was some years ago brought from thence, as a family receipt, by a person of high rank, who having experienced remarkable benefit from it in a hereditary gout, ordered it to be printed, and copies delivered to all who should ask for them. (See the Medical Observations and Inquiries published by a society of physicians in London, vol. i. p. 126.) The directions for using this medicine are to the following effect:

“Take one dram of the powder
“every morning fasting, in a cup of
“any agreeable liquor, keeping fast-
“ing an hour and a half after it.
“Continue this for three months
“without interruption, then dimi-
“nish the dose to three quarters of
“a dram for three months longer,
“then to half a dram for six months
“more. After the first year, it will
“be sufficient to take half a dram
“every other day. As this medi-
“cine operates insensibly, it will
“take perhaps two years before any
“great benefit is received. In rheu-
“matisms that are only accidental,
“a few of the dram doses may do:
“but in habitual rheumatisms, and
“such as are of long standing, it
“must be taken as for the gout: the
“remedy requires patience, as it o-
“perates but slow in both cases.”

Dr Clephane remarks (in the

learned and judicious paper above referred to), that this medicine will probably do good in many cases, for in many cases there is reason to believe it extremely proper; but that an indiscriminate use of it will probably again do what a like abuse formerly did, bring a good medicine into disrepute.

PULVIS CATHARTICUS SALINUS.

Saline cathartic powder.

Take of

Vitriolated tartar,

Crytals of tartar, each one dram;

Sal prunel, or purified nitre, one scruple.

Make them into a powder.

THIS is an useful cathartic in inflammatory disorders. The quantity above directed is intended for one dose, which should be accompanied with plentiful dilution.

PULVIS CARMINATIVUS.

Carminative powder.

Take of

Aniseed,

Sweet fennel seed, each two scruples;

Ginger, one scruple;

Nutmegs, half a scruple;

Fine sugar, half a dram.

Reduce them into a powder, for four doses.

THIS powder is employed for expelling flatulencies arising from indigestion, particularly those to which hypochondriacal and hysterical persons are subject. It is likewise usefully given in the gripes of young children, either mixed with their food or otherwise.

PULVIS DIURETICUS.

Diuretic powder.

Take of

Sal prunel, ten grains;

O o 4

Salt

Salt of amber, four grains;
Oil of turpentine, three drops;
Fine sugar, one scruple.

Drop the oil upon the sugar, then add the salts, and grind the whole together.

THIS powder is a very efficacious diuretic, and may be given to advantage in cases where the assistance of such forcing medicines are required. The salts somewhat abate the heating quality of the oil, and at the same time cool and relax the passages.

PULVIS ROBORANS.
Strengthening powder.

Take of
Extract of Peruvian bark, twelve grains;
Salt of steel, two grains;
Oil of cinnamon, one drop;
Fine sugar, half a dram.
Having mixed the oil with the sugar, add the other ingredients, and grind the whole well together, for two doses.

THIS medicine has a much better title to the appellation of a strengthener, than those usually met with under that name in dispensatories. In lax habits, debilities of the nervous system, and the weaknesses peculiar to either sex, it has generally good effects.

PULVIS ad STRUMAS.
Powder against the king's evil.

Take of
Burnt sponge, one scruple;
Nitre,
Coralline,
Fine sugar, each half a scruple.
Reduce them into powder.

THIS powder is recommended in scrophulous disorders and obstructions of the glands: it is supposed to open and deterge the minute vessels,

and carry off the offending matter by urine. Dr Mead informs us, in his *Monita Medica*, that he very frequently experienced its good effects; he used to give the quantity above prescribed twice a-day, with three or four glasses of the less compounded lime-water along with each dose; if the patient was much emaciated, the lime-water was mixed with about an equal quantity of milk.

PULVIS VERMIFUGUS.
Vermifuge powder.

Take of 1.
Tanfy flowers,
Worm-seed, each three drams;
Salt of steel, one dram.
Make them into a powder.

Take of 2.
Tin reduced into fine powder, two drams;
Ethiops mineral, half a dram;
Fine sugar, one scruple.
Mix them well together.

Take of 3.
Choice rhubarb, three drams;
Scammony,
Calomel, each one dram.
Mix and make them into a powder.

ALL these compositions are well calculated for the purpose expressed in the title. The first is given in the hospitals, in doses of half a dram twice a-day; which quantity contains about four grains and a half of the salt of steel. The second is divided into three or four doses, one of which is taken every morning, and a cathartic on the day following. The third, which is a brisk purgative, is used in the quantity of half a dram, after the others have been promised; or it is taken once or twice a-week without their assistance.

C H A P. II.

TROCHES AND LOZENGES.

TROCHES and lozenges are composed of powders made up with glutinous substances into little cakes, and afterwards dried. This form is principally made use of for the more commodious exhibition of certain medicines, by fitting them to dissolve slowly in the mouth, so as to pass by degrees into the stomach; and hence these preparations have generally a considerable proportion of sugar or other materials grateful to the palate. Some powders have likewise been reduced into troches, with a view to their preservation; though possibly for no very good reasons: for the moistening, and afterwards drying them in the air, must in this light be of greater injury, than any advantage accruing from this form can counterbalance.

General RULES for making
TROCHES.

I.

THE three first rules laid down for making powders, are also to be observed in the powders for troches [*E. +*]

II.

If the mass proves so glutinous as

to stick to the fingers in making up, the hands may be anointed with any convenient sweet or aromatic oil; or else sprinkled with powder of starch, or with that of liquorice [*E. +*]

III.

In order to thoroughly dry the troches, put them on an inverted sieve, in a shady airy place, and frequently turn them [*E. +*]

IV.

Troches are to be kept in glass vessels, or in earthen ones well glazed [*E. +*]

TROCHISCI ALBI RHASIS,
seu **SIEF ALBUM.**

The white troches, or dry collyrium
of Razi.
Edinb. +

Take of

Cerusse, three ounces;
Sarcocolla, one ounce;
Gum tragacanth, three drams;
Camphor, one dram:
Rose-water, as much as is sufficient.

Make them into troches according to art.

THE making these ingredients into troches is an unnecessary trouble;

ble; since, before they are used, they must be powdered again, for being mixed with rose-water or other liquors for the purposes of a cooling, antacid, and moderately astringent collyrium, injection, &c. The London College has therefore directed them to be kept in the form of powder (under the title of *Pulvis e cerussa compositus*), omitting the camphor, which is not found in the original of Razi.

TROCHISCI BECHICI ALBI.

White pectoral troches.
Lond.

Take of

Double-refined sugar, a pound and a half;
Starch, an ounce and a half;
Liquorice, six drams;
Florence orris root, half an ounce.
Reduce these ingredients into powder, which is to be made up into troches with a proper quantity of mucilage of gum tragacanth.

Edinb.

Take of

Purest sugar, one pound;
Gum Arabic, four ounces;
Starch, one ounce;
Flowers of benzoin, half a dram.
Having beat them all into a powder, make them into a proper mass with rose-water, so as to form troches.

THESE compositions are very agreeable pectorals, and may be used at pleasure. They are calculated for softening acrimonious humours, and allaying the tickling in the throat which provokes coughing.

TROCHISCI BECHICI NIGRI.

Black pectoral troches.
Lond.

Take of

Extract of liquorice,
§

Double-refined sugar, each ten ounces;

Gum tragacanth, half a pound.
Drop upon these ingredients, so much water as will make the mass soft enough to be formed into troches.

Edinb.

Take of

Extract of liquorice,
Gum Arabic, each four ounces;
White sugar, eight ounces.
Dissolve them in warm water, and strain: then evaporate the mixture over a gentle fire till it is of a proper consistence for being formed into troches.

THESE compositions are designed for the same purposes as the white pectoral troches above described. In foreign pharmacopœias there are some other troches of this kind, under the titles of *Trochisci bechici flavi* and *rubri*; the first are coloured with saffron, the latter with bole armenic. The dissolving and straining the extract of liquorice and gum Arabic, as now ordered in the last of the above prescriptions, is a considerable improvement; not only as they are by that means more uniformly mixed than they can well be by beating; but likewise as they are thereby purified from the heterogeneous matters, of which both those drugs have commonly no small admixture.

TROCHISCI BECHICI cum OPIO.

Pectoral troches with opium.
Edinb.

Take of

Pure opium, two drams;
Balsam of Peru, one dram;
Tincture of Tolu, three drams.
Grind the opium with the balsam and tincture, previously mixed, till it is thoroughly dissolved; then add, by degrees,

Of

Of
Common syrup, eight ounces;
Extract of liquorice, softened in
warm water, five ounces.

Whilst beating them diligently, gradually sprinkle upon the mixture five ounces of powdered gum Arabic. Exsiccate so as to form troches, each weighing ten grains.

THE directions for preparing the above troches, are so full and particular, that no farther explanation is necessary. Six of the troches prepared in the manner here ordered, contain about one grain of opium. These troches are medicines of approved efficacy in tickling coughs depending on an irritation of the fauces. Besides the mechanical effect of the inviscating matters in involving acrid humours, or lining and defending the tender membranes, the opium must, no doubt, have a considerable share, by more immediately diminishing the irritability of the parts themselves.

TROCHISCI de MINIO.

Red-lead troches.

Edinb. +

Take of

Red lead, half an ounce;
Corrosive mercury sublimate, one ounce;
Crumb of the finest bread, four ounces.

Make them up with rose-water into oblong troches.

THESE troches are employed only for external purposes as escharotics: they are powerfully such, and require a good deal of caution in their use.

TROCHISCI de MYRRHA.

Troches of myrrh.

Edinb. +

Take of

Myrrh, one ounce and a half;

Lovage seed,
Pennyroyal leaves,
Ruffia castor,
Galbanum, each one ounce;
Essential oil of savin, half a dram;
Elixir proprietatis, as much as is sufficient.

Let the gum be softened with the elixir into a mass of the consistence of honey; then add the oil and powders, and make the whole into troches according to art.

THESE troches are very well contrived in regard to efficacy, and superior to those in most other pharmacopœias under the same title. Maddar and cummin seed, two of their former ingredients, which were objected to in a former edition of this work, are now expunged; the one as being an unnecessary article; the other, as being an offensive one, and not of similar intention with the rest. In the place of this last, lovage seed is introduced, which is doubtless more agreeable to the intention of the medicine. Asafetida is supplied by an increase of the galbanum, and the essential oil of the rue by an increase of the oil of the savin. There seems to be no occasion for making a medicine of this kind into troches, as it cannot be conveniently taken in that form: the London College have therefore exchanged their *Trochisci e myrrha* for a *Pulvis e myrrha compositus*, which see.

TROCHISCI e NITRO.

Troches of nitre.

L. and E.

Take of

Nitre purified, four ounces
(‘three E.’);
Double-refined sugar, one pound
(‘nine ounces E.’).

Make them into troches with mucilage of gum tragacanth.

THIS

THIS is a very agreeable form for the exhibition of nitre; though, when the salt is thus taken without any liquid (if the quantity is considerable), it is apt to occasion uneasiness about the stomach, which can only be prevented by large dilution with aqueous liquors.

TROCHISCI e SCILLA.

Troches of squills.

Lond.

Take of

Baked squills, half a pound;

Wheat flour, four ounces.

Beat them together, and form the mass into troches, which are to be dried with a gentle heat.

THIS preparation is used only as an ingredient in the theriaca. The design of baking the squill is to abate its acrimony; and making it afterwards into troches seems the most convenient way of drying it: common wheat flour is as fit for this purpose as any, though that of the white vetch has been generally directed,

‘As the squill is so exceedingly nauseous, it is a very unfit substance for being used in the form of troches.’

TROCHISCI e SULPHURE.

Troches of sulphur.

Lond.

Take of

Flowers of sulphur, washed, two ounces;

Double-refined sugar, four ounces.

Beat them together, and adding some mucilage of quince seeds, form them into troches.

TROCHISCI e SULPHURE, five DIASULPHURIS.

Troches of sulphur.

Edinb.

Take of

Flowers of sulphur, two ounces;

Flowers of benzoine, one scruple;

White sugar, four ounces;

Facitious cinnabar, half a dram.

Beat them together, and add mucilage of gum tragacanth, as much as is sufficient.

Mix and make them into troches according to art.’

THESE compositions are to be considered only as agreeable forms for the exhibition of sulphur, no alteration or addition being here made to its virtue; unless, that by the flowers of benzoine in the second prescription, the medicine is supposed to be rendered more efficacious as a pectoral.

‘The facitious cinnabar seems chiefly intended as a colouring ingredient.’

TROCHISCI e TERRA

“JAPONICA.

Troches of Japan earth.

Lond.

Take of

Japan earth,

Gum Arabic, each two ounces;

Sugar of roses, sixteen ounces.

Beat them together, and dropping in some water, make them into troches.

Edinb. +

Take of

Japan earth, two ounces;

Gum tragacanth, half an ounce;

White sugar, one pound;

Rose-water, a sufficient quantity.

Make them into troches.

A preparation of this kind, with the addition of ambergris and musk, which are here more prudently omitted, has long been in some esteem as a mild restraining, &c. under the title of *Catechu*. Medicines of this class, in general, are excellently fitted for the form of troches; for when slowly and gradually received into

into the stomach, as this form occasions them to be, they produce much better effects than if an equal quantity was taken down at once. The above troches are sufficiently palatable, and of considerable service in some kinds of coughs, thin acrid defluxions, diarrhœas, &c.

TABELLÆ CARDIALGI- CÆ.

Cardialgic lozenges.
Lond.

Take of

Chalk, prepared, four ounces;
Crabs-claws, prepared, two ounces;
Bole armenic, or French bole, half an ounce;
Nutmegs, one scruple;
Double-refined sugar, three ounces.

Reduce these ingredients into powder, and make them into troches with water.

TROSCHSICI CARDIAL- GICI.

Edinb. +

Take of

Oyster-shells, prepared,
White chalk, powdered, each two ounces;
Gum Arabic, half an ounce;
Nutmegs, half a dram;
White sugar, six ounces;
Common water, a sufficient quantity.

Make them into troches according to art.

'In the present edition of the Edinburgh Pharmacopœia, the above troches are superseded by *Pulvis cretaceus*.'

THESE compositions are calculated against that uneasy sensation at stomach, improperly called the *heartburn*; in which they oftentimes give immediate relief, by absorbing and neutralizing the acid

juices that occasion this disorder. The absorbent powders here made use of, are of the most powerful kind, though there does not seem to be any occasion for using more than one of them. Some have prescribed the following formula.

TABELLÆ ANTACIDÆ.

Antacid lozenges.

Take of

Prepared white chalk, four drams;
Candied ginger, three drams;
Cinnamon, one dram;
Fine sugar dissolved in water, as much as is sufficient to reduce the whole into a due consistence for being formed into lozenges.

HERE it may be observed, that all these compositions, though very effectual for the intention, are accompanied with an inconvenience, which is frequently complained of in their use; their binding the belly. The use of the chalk, oyster-shells, and crabs-claws, is to absorb acidities; and both these and the other common absorbents, united with acids, compose therewith astringent concretes. The following composition is free from this inconvenience.

TABELLÆ ANTACIDÆ LAXANTES.

Laxative antacid lozenges.

Take of

Magnesia alba, six ounces;
Double-refined sugar, three ounces;
Nutmegs, one scruple.

Mix them well together, and form them into troches with mucilage of gum tragacanth.

SACCHARUM ROSACEUM.

Sugar of roses.
Lond.

Take of

Red rose-buds, freed from the heels,

heels, and hastily dried, one ounce;

Double-refined sugar, one pound. Reduce them separately into powder, then mix, and moisten them with water, that they may be formed into troches, which are to be dried by a gentle heat.

‘In a former edition of the Edinburgh Pharmacopœia, this preparation was directed as follows.’

TABELLÆ ROSACEÆ.

Rose tablets.

Edinb. +

Take of

Conserve of red roses, four ounces;

White sugar in powder, one pound. If any moisture is required, take of syrup of dry roses, a sufficient quantity for forming them into troches, which are to be dried with a gentle heat.

THE sugar of roses was formerly made by boiling a pound of fine sugar with four ounces of the juice of red roses over a gentle fire till the juice was almost all evaporated; then throwing in an ounce of dry red roses reduced to a very fine powder; after which the matter was poured out upon a marble, and formed into lozenges. The two methods above directed, are more simple and commodious; though, if any virtue be expected from the roses, the medicine is not at all improved by the alteration. As the conserve contains only one-fourth its weight of roses in a fresh state, it is obvious that the quantity of fresh roses in the second prescription is less than that of the dry ones in the first.

These preparations are chiefly valued for their agreeableness to the eye and palate. Some likewise esteem them, medicinally, as light restringents, and look upon them,

not undeservedly, as an excellent addition to milk in phtisical and hectic cases. Some have been accustomed to add a portion of acid in making these preparations: this improves the colour, but renders them unfit to be taken with milk.

TABELLÆ ANTHELMINTICÆ.

Anthelmintic sugar-cakes.

Take of

Powdered tin, half a dram;

Fine sugar, half an ounce;

Rose-water, a sufficient quantity to make them into a mass for tablets.

Take of

2.

Scammony,

Mercurius dulcis, each four grains;

Fine sugar, half an ounce;

Rose-water, a sufficient quantity to make them into tablets.

THESE compositions are calculated for children, who are not easily prevailed on to take anthelmintic medicines in less agreeable forms. If the first is made use of, it must be repeated three or four mornings successively, after which a purge is to be taken: The second, if it requires repetition, is to be given only every other morning. The proportions of the ingredients are to be varied, according to the age and strength of the patient.

TROCHISCI NERVINI.

Nerve troches.

Take of

Compound spirit of lavender, sixty drops;

Oil of cinnamon,

Oil of rosemary, each four drops;

Florence orris root, two drams;

Fine sugar, one dram;

Mucilage of gum tragacanth, as much as will reduce them into a mass, which is to be formed into

into troches of about half a scruple each.

ONE or two of these troches taken occasionally, and suffered to dissolve in the mouth, prove serviceable to those who are subject to paralytic and other nervous disorders. Warm aromatic medicines, given in this form and manner, are supposed, from their slow dissolution in the mouth, to affect the nervous system more immediately than if received at once into the stomach.

MORSULI PURGANTES.

Purging tablets.

Take of

Crystals of tartar, half an ounce;
Scammony, three drams;
Oil of cinnamon, four drops;
Double-refined sugar, eight ounces.

Make them up with rose water into troches, weighing each about a dram.

THIS is a sufficiently elegant form for purgative troches. Each of the *morsuli* contains two grains and a half of scammony.

MORSULI de RHABBARO.

Rhubarb troches.

Take of

Cream of tartar,
Rhubarb, each two drams;
Fresh lemon-peel, half a dram;
Fine sugar, four ounces.

Make them into troches with rose-water.

Two drams of these troches contain about seven grains of rhubarb, and as much cream of tartar. Both this and the preceding composition are among the officinals of the *Brandenburgh Pharmacopœia*.

MORSULI RESTAURANTES

KUNCKELII.

Kunckel's antimonial tablets.

Take of

The best Hungarian antimony, levigated into an impalpable powder, three drams and a half;

Sweet almonds, peeled,

Fresh pine nuts, each half an ounce;

Cinnamon, one dram;

Lesser cardamom-seeds, husked, half a dram;

Double-refined sugar, four ounces.

Dissolve the sugar in equal quantities of cinnamon water and rose-water; then mix therewith the other ingredients, and form the whole into tablets, weighing one dram each.

THESE tablets were brought into esteem by Kunckel, at a time when the internal use of crude antimony was almost universally reckoned poisonous. He had recourse to them as a desperate medicine, in violent pains and contractions of the arms, after all the common methods of cure had been used without any relief; and being happily, in a short time, perfectly freed from his complaints, he made trial of them in several other cases, with remarkable success. He seems to have begun with doses of four or five grains (that is, one of the tablets above prescribed), which were repeated thrice a-day, and gradually increased to a dram or more of the antimony every day.

TROCHISCI SIALAGOGI.

Sialagogue troches.

Take of

Pellitory of Spain, half an ounce;

Mastic, two drams;

Oil of cloves and marjoram, each one dram;

Yel.

Yellow wax, a sufficient quantity.
Make them into troches or pellets.

ONE of these troches is to be occasionally held in the mouth, and chewed, to promote a discharge of saliva; which they effect by warming and stimulating the salival glands.

TROCHISCI STOMACHICI
Stomachic troches.

Take of

Hard extract of Peruvian bark,
one dram;

Oil of cinnamon,

Oil of mint, each ten drops;

Fine sugar, four ounces.

Make them into troches with mucilage of gum tragacanth.

THESE troches are of service for warming and strengthening the stomach, expelling flatulences, and promoting digestion: for these purposes they are as effectual as any thing that can well be contrived in this form.

TROCHISCI SUAVEOLENTES.
Sweet-smelling troches.

Take of

Strained storax, one scruple;

Ambergris, fifteen grains;

Musk, seven grains;

Oil of cinnamon, six drops;

Fine sugar, one ounce.

Make them into small troches with mucilage of gum Arabic.

C H A P. III.

P I L L S.

TO this form are peculiarly adapted those drugs which operate in a small dose, and whose nauseous and offensive taste or smell require them to be concealed from the palate.

Pills dissolve the most difficultly in the stomach, and produce the most gradual and lasting effects, of all the internal forms. This is, in some cases, of great advantage; in others, it is a quality not all desirable; and sometimes may even be of dangerous consequence, particularly with regard to emetics; which, if they pass the stomach undissolved, and afterwards exert themselves in the intestines, operate there as violent cathartics. Hence emetics are, among us, scarce ever given in pills. And hence to the resinous and difficultly soluble substances, saponaceous ones ought to be added, in order to promote their solution.

Gummy resins, and inspissated juices, are sometimes soft enough to be made into pills, without addition: where any moisture is requisite, spirit of wine is more proper than syrups or conserves, as it unites more readily with them, and does not sensibly increase their bulk. Light dry powders require syrup or mucilages: and the more ponderous, as the mercurial and other

metallic preparations, thick honey, conserve, or extracts.

Light powders require about half their weight of syrup; of honey, about three-fourths their weight; to reduce them into a due consistence for forming pills. Half a dram of the mass will make five or six pills of a moderate size.

*General RULES for making PILLS,
from the Edinburgh Pharmacopœia.*

I.

THE three first rules, formerly laid down for making powders, are here also to be carefully observed.

II.

Gums and inspissated juices, are to be first softened with the liquid prescribed: then add the powders, and continue beating them all together till they are perfectly mixed.

III.

The masses for pills are best kept in bladders, which should be moistened now and then with some of the same kind of liquid that the mass was made up with, or with some proper aromatic oil.

PILULÆ AROMATICÆ.

*Aromatic pills.**Lond.*

Take of

Socotorine aloes, an ounce and a half;

Gum guaiacum, one ounce;

Aromatic species,

Balsam of Peru, each half an ounce.

Reduce the aloes and gum guaiacum separately into powder, then mix them with the rest, and make the whole into a mass with a sufficient quantity of syrup of orange-peel.

It is somewhat difficult to unite these ingredients into a mass fit for making pills of. The best way is, first to rub the aromatic species with the balsam, then to add the powdered aloes, and afterwards the guaiacum; when these are well mixed together, drop in the syrup by little and little at a time. These pills are contrived to supply the place of the *Pilula diambra* of our former Pharmacopœia. They are far more elegant as well as simple, truly uniform in their ingredients, and excellently adapted to the purposes they seem designed for. Taken in small doses, as half a scruple or little more, and occasionally repeated, they warm the stomach, and by degrees the whole habit, promote perspiration, and all the natural secretions. If the dose is considerable, they operate gently by stool; and if continued for some time in smaller doses, they prove at length purgative, or introduce a salutary looseness.

PILULÆ ALOETICÆ.

*Aloetic pills.**Edinb.*

Take of

Socotorine aloes in powder,

Thick extract of gentian, each two ounces;

Make them into a mass with simple syrup.

THESE pills were formerly directed to be made with Castile soap; from a notion which Boerhaave and some others were very fond of, that soap promoted the solution of resinous and several other substances in the stomach. This, however, seems to be a mistake; and, on the contrary, it is highly probable, that the alkaline part of the soap is in most instances separated from the oily by the acid in the stomach; by which decomposition the soap may come to retard instead of promoting the solution of the aloes. These pills have been much used as warming and stomachic laxatives: they are very well suited for the costiveness so often attendant on people of sedentary lives. Like other preparations of aloes, they are also used in jaundice, and in certain cases of obstructed menses. They are seldom used for producing full purging; but if this is required, a scruple or half a dram of the mass may be made into pills of a moderate size for one dose.

PILULÆ de JALAPPA.

*Jalap pills.**Edinb.*

Take of

Extract of jalap, two ounces;

Powder of aromatics, half an ounce.

Beat them into a mass with simple syrup.

ONE of the same kind, with powdered jalap in substance instead of the extract, is used in some of our hospitals, as a cheap and effectual purge.

PILULÆ E SCAMMONIO CUM
ALLIO.

Pills of scammony with aloes.

Take of

Socotorine aloes, one dram;
Aromatic species, half a dram;
Scammony, one scruple;
Soft extract of liquorice, as much
as is sufficient to reduce them
into a mass of a due consistence
for being formed into pills.

THIS warm purgative is recommended for removing the crudities, &c. after a surfeit or debauch, and for preventing arthritic and other complaints incident to those who live high. The quantity above described may be made into thirty pills, of which five or six are to be taken for a dose.

PILULÆ ex COLOCYNTHI-
DE SIMPLICIORES.

The more simple colocynth pills.
Lond.

Take of

Pith of colocynth,
Scammony, each two ounces;
Oil of cloves, two drams.

Pulverise the colocintida and scammony by themselves, then mix in the oil, and make the whole into a mass with syrup of buckthorn.

THE operator should be careful, in pulverising the colocynth, to avoid the finer particles that fly off from it; which, though they do not considerably affect the mouth or fauces, have sometimes been observed to occasion violent purging. The drug should first be well dried, cut with sheers into small pieces, and freed from the seeds; then rub it in an oiled mortar, adding a few drops of sweet oil occasionally during the trituration: afterwards mix this powder with the powdered scammony, add the essential oil prescri-

bed, and make the mixture into a mass as above directed. The composition is apt to grow stiff and dry in keeping, and therefore ought to be made pretty soft at first; the pills should be formed as they are wanted; for, when long kept, they become so hard, as to have sometimes passed through the intestines undissolved.

These pills (formerly called *Pilulæ de duobus*, or *pills of two ingredients*) are very strong cathartics, and ought not to be ventured upon in cases where less violent medicines will take effect. They have been often made use of in large doses, along with large doses also of mercurials in venereal complaints, both in recent gonorrhœa, and in the swellings and inflammations which sometimes follow from the suppression of the discharge: but in both these cases they are apparently improper, as they generally injure the constitution, and as the latter complaint is for the most part aggravated by them. The essential oil, which is added as a corrector to the purgative ingredients, does not contribute so much, as is commonly supposed, to abate the roughness of their operation. See page 373. The dose of these pills is from fifteen grains to half a dram; some have imprudently gone as far as two scruples. Half a dram contains ten grains of colocintida, and as much scammony.

PILULÆ ex COLOCYNTHI-
DE CUM ALOE, vulgo PI-
LULÆ COCCIÆ.

Colocynth pills with aloes, commonly called Coccia.

Edinb.

Take of

Socotorine aloes,
Scammony, of each two ounces;
Sal polychrest, two drams;

Colocynth, one ounce;
Oil of cloves, two drams.

Reduce the aloes and scammony into a powder with the salt; then let the colocynth, beat into a very fine powder, and the oil be added; lastly, make it into a proper mass with mucilage of gum Arabic.

**PILULÆ ex COLOCYNTHI-
DE cum ALOE.**

*Colocynth pills with aloes.
Lond.*

Take of

Socotorine aloes,
Scammony, each two ounces;
Pith of colocynth, one ounce;
Oil of cloves, two drams.

Let the dry species be separately reduced into powder; then mix in the oil, and make the whole into a mass with syrup of buckthorn.

‘THESE two formulæ are nearly the same; the salt may perhaps assist in dividing the aloes and scammony.’ The ingredients are reduced to the proportions wherein they are set down in the original of Galen; and what is of greater consequence, the medicine becomes less ungrateful to the stomach, and less virulent in its operation. Half a dram of the mass contains nearly four grains of colocynthida, eight of aloes, and eight of scammony.

PILULÆ ECPHRACTICÆ.

*Deobstruent pills.
Lond.*

Take of the

Aromatic pills, three ounces;
Rhubarb,
Extract of gentian,
Salt of steel, each one ounce;
Salt of wormwood, half an ounce.

Beat them together into a mass with solutive syrup of roses.

It is difficult to bring this mass into the due consistence, the two salts acting upon one another, so as to make it swell and crumble. Notwithstanding the alkaline salt employed, the pill does not prove at all alkaline; for the acid of the salt of steel forsakes its metal, and unites with the alkali into a vitriolated tartar; whence some have proposed using, instead of the two salts here directed, an ounce of vitriolated tartar already made, and half an ounce of any of the calces of iron: this, they observe, prevents the inconvenience above mentioned, without making any apparent alteration in the quality of the medicine.

**PILULÆ ECPHRACTICÆ
CHALYBEATÆ.**

*Chalybeate ecpRACTIC pills.
Edinb. +*

Take of

The mass of common pills, called *Rufus's pills*, described hereafter, one ounce and a half;
Gum ammoniacum,
Resin of guaiacum, each half an ounce;
Salt of steel, five drams;
Syrup of orange-peel, as much as is sufficient to reduce the whole into a mass.

THE salt of steel, which is one of the most active preparations of that metal, remains here undecomposed. Both these and the foregoing pills are very well calculated for answering the intention expressed in the title. A dram of the mass may be made into twelve pills, and two or three of these taken every night, or oftener, in chlorotic or other cases, where warm aperient or deobstruent medicines are proper.

**PILULÆ ECPHRACTICÆ
PURGANTES.**

Purging deobstruent pills.

Edinb. +

Take of

Socotorine aloes,
Extract of black hellebore,
Scammony, each one ounce ;
Gum ammoniacum,
Resin of guaiacum, each half an ounce ;
Vitriolated tartar, two drams ;
Essential oil of juniper berries,
one dram.

Beat them into a mass, with a sufficient quantity of syrup of buckthorn.

THIS composition may be given from eight or ten grains to a scruple or half a dram, according as it is intended to keep the belly open or to purge. Half a dram of the mass contains about six grains of each of the capital purgative ingredients, aloes, scammony, and extract of hellebore.

PILULÆ FETIDÆ.

Fetid pills.

Edinb. +

Take of

Asafetida,
Russia castor, each one dram and a half ;
Camphor, half a dram ;
Oil of hartshorn, twenty-four drops.

Beat the camphor with the asafetida ; then add the castor and oil of hartshorn, and make the whole into a mass.

PILULÆ GUMMOSÆ.

Gum pills.

Lond.

Take of

Galbanum,
Opoponax,
Myrrh,
Sagapenum, each one ounce ;

Asafetida, half an ounce.
Make them into a mass with syrup of saffron.

Edinb.

Take of

Asafetida,
Galbanum
Myrrh, each one ounce ;
Rectified oil of amber, one dram.
Beat them into a mass with simple syrup.

ALL these pills are designed for antihysterics and emmenagogues, and very well calculated for answering those intentions ; half a scruple, a scruple, or more, may be taken every night or oftener. The fetid pills of our former Pharmacopœia were considerably purgative : the purgative ingredients are now omitted, as the physician may easily, in extemporaneous prescription, compound these pills with cathartic medicines, in such proportions as particular cases shall require.

The following compositions are calculated for the same intentions as the foregoing deobstruent, fetid, and gum pills.

Take of

1.

Asafetida,
Wood-foot.
Myrrh, each two ounces ;
Oil of amber, one dram and a half ;
Syrup of sugar, a sufficient quantity.

Mix, and make them into a mass, according to art.

Take of

2.

Asafetida, one dram ;
Martial flowers, half a dram ;
Oil of amber, eight drops ;
Balsam of Peru, a sufficient quantity to reduce them into a mass.

P p 3

Take

Take of 3.
 Afafetida,
 Gum ammoniacum,
 Myrrh,
 Aloes,
 Rust of steel prepared,
 Extract of gentian, each one
 scruple;
 Syrup of ginger as much as will
 make the other ingredients in-
 to a mass.

Take of 4.
 Galbanum, one dram;
 Salt of steel, half a dram;
 Afafetida,
 Aromatic species, each one scruple;
 Tincture of myrrh, as much as
 will make them into a mass.

IN hysterical disorders, after bleeding and purging, where a sanguine and plethoric habit indicates these evacuations, chalybeate medicines are in general the most to be relied upon; especially when joined, as in these compositions, with bitters and deobstruent gums. At first taking, they are apt to increase the complaints (as the experienced Sydenham observes), and occasion great disorders both of body and mind; which however soon go off, or may be relieved by a proper dose of opium given at bed-time. A dram of either of the masses is to be made into twelve pills; one or two of which may be taken for a dose twice or thrice a-day.

PILULÆ MERCURIALES.

Mercurial pills.

Edinb.

Take of
 Quicksilver,
 Honey, each one ounce;
 Crumb of bread, two ounces.
 Grind the quicksilver with the honey in a glass mortar till the glo-

bules disappear, adding occasionally a little simple syrup; then add the crumb of bread, and beat the whole with water into a mass, which is to be immediately divided into four hundred and eighty equal pills.

THE quicksilver was formerly directed to be ground with resin of guaiacum and castile soap. The former was supposed to coincide with the virtues of the mercury, and the latter was used chiefly to divide the globules of mercury. For this last intention Doctor Saunders found that honey, the substance here ordered, is of all others the most effectual: But we would suppose with this gentleman, that something farther is done in this process than the mere division of the mercurial globules, and that part of the quicksilver is as it were amalgamated with the honey, or brought to a state similar to that in Plenck's solution.

The mercurial pill is one of the best preparations of mercury, and may in general supersede every other form of this medicine. It is necessary to form the mass immediately into pills, as the crumb soon becomes too hard for that purpose. Soap was undoubtedly a very improper medium for triturating the mercury; it is not only too hard for that purpose, but when the preparation entered the stomach, the alkaline part of the soap being engaged by the acid in that viscus, the mercury would in all probability be immediately separated. The honey and bread can only be changed by the natural powers of digestion, and can never oppress the stomach. The dose of the pills, is from two to four or six in the day, according to the effects we wish to produce.

Lond.

Take of

Quicksilver, five drams;

Straßburgh turpentine, two
drams;

Cathartic extract, four scruples;

Rhubarb, powdered, one dram.

Grind the quicksilver with the turpentine until they are perfectly incorporated; then let the other ingredients be beat up with this mixture into a mass. If the turpentine happens to be too thick, soften it with a little oil olive.

PILULÆ MERCURIALES LAXANTES.

*Laxative mercurial pills.**Edinb. +*

Take of

Pure quicksilver, one ounce;

Resin of guaiacum,

Extract of black hellebore,

Powdered rhubarb, each half an
ounce;Common syrup, a sufficient quan-
tity.

Grind the quicksilver with the resin of guaiacum until they are perfectly incorporated; then add the other ingredients, and beat the whole into a mass according to art.

THESE compositions are useful purgative mercurials. They are, however, liable to an inconvenience, uncertainty in regard to their strength: for the mercury is but loosely united with the other ingredients, and very apt to separate and run together in its original form; in which state it never exerts its proper virtue. Although it appears perfectly extinguished by the matters it is ground with at first, part of it is apt to be spued out on beating up the mixture with the other ingredients into a mass.

PILULÆ de GAMBOGIA.

*Gamboge pills.**Edinb. +*

Take of

Socotorine aloes,

Extract of black hellebore,

Gamboge,

Mercuriusdulcis, each two drams;

Essential oil of juniper berries,
half a dram;Syrup of buckthorn, a sufficient
quantity.

Beat them into a mass.

THIS is a strong mercurial purgative, in which the mercurial preparation is not liable to the uncertainty which the crude quicksilver is accompanied with in the foregoing compositions. The dose is from ten or fifteen grains to half a dram. This last quantity contains of aloes, extract of hellebore, gamboge, and mercurius dulcis, about five grains of each.

PILULÆ ÆTHIOPICÆ.

*Ethiopic pills,**Edinb.*

Take of

Quicksilver, six drams;

Golden sulphur of antimony,

Resin of guaiacum,

Honey, each half an ounce.

Grind the quicksilver with the honey, in a glass mortar, until the mercurial globules entirely disappear; then add the golden sulphur and guaiacum, with as much mucilage of gum Arabic as is sufficient to make the mixture into a mass of the proper consistence for forming pills.

THESE pills are much more efficacious than those of a former edition; the ethiops mineral, there ordered, being exchanged for a more active composition. In their present form, they resemble Dr Plum-

mer's pills, described in the Edin. Effays, (see page 559 and 601 of this work), to which they are preferable in one respect, that they are less apt to run off by stool. They are an useful alterative both in cutaneous and venereal disorders. One fourth part of the quantity above prescribed, may be made into sixty pills; of which, from one to four may be taken every night and morning, the patient keeping moderately warm during the whole time that this course is continued.

I shall here insert some other formulae of mercurial pills, which may be occasionally had recourse to, and of which the greatest part has been kept as secrets in particular hands.

Take of 1.

Crude quicksilver,

Hard extract of guaiacum, each one dram and a half;

Essential oil of sassafras, twenty drops;

Venice turpentine, a sufficient quantity.

Grind the quicksilver with the turpentine, till they are perfectly incorporated: then add the other ingredients, and reduce the whole into an uniform mass; which is to be made into forty pills. Two, three, or more of these, may be taken for a dose.

Take of 2.

Mercurius dulcis,

Prepared chalk, each one scruple:

Mucilage of gum arabic, a sufficient quantity.

Make them into twelve pills, of which the dose is from one to three.

Take of 3.

Mercurius dulcis, half a scruple;

Softer extract of guaiacum, one dram;

Essential oil of sassafras, ten drops. Mix, and make them into a mass, for twenty pills; the dose of which is from one to six.

Take of 4.

Mercurius dulcis, half a scruple; Camphor, half a dram;

Soft extract of guaiacum, as much as is sufficient to make them into a mass, which is to be formed into twenty pills; the dose is from one to six.

Take of 5.

Mercurius dulcis, half a scruple;

Venice turpentine, as much as will reduce it into a mass of a proper consistence; which is to be formed into five pills, for as many doses.

Take of 6.

Calcined mercury, commonly called *precipitate per se*.

Thebaic extract, each two grains;

Balsam of Peru, as much as will make them into a mass: which is to be formed into two pills, for two doses.

Take of 7.

Turbith mineral, two scruples;

Thebaic extract, one scruple;

Mucilage of gum arabic, as much as is sufficient to reduce them into a mass, which is to be formed into twenty pills, for as many doses.

The *mercurius corallinus* may be made into pills in the same manner, and taken in the same dose.

Take of 8.

Mercurius dulcis, half a scruple;

Crude antimony, finely levigated, one dram;

Conserve of orange-peel, as much as will reduce them into a mass.

This is to be formed into ten pills; of

of which the dose is from one to three.

Take of 9.
Mercurius dulcis,
Precipitated sulphur of antimony,
each five grains;
Socotorine aloes, fifteen grains;
Balsamic syrup, a sufficient quantity to reduce them into a mass; which is to be made into five pills, for as many doses.

THE method of managing the above mercurial medicines, as alteratives, is, to give small doses every morning and evening; and rather prolong the time of continuing their use than increase the dose. The patient ought to keep warm, and drink of warm diaphoretic liquors, as infusion of saffrafras, decoction of the woods, the simple or compound lime-water, &c.

PILULÆ PLUMMERI.

Plummer's pills.
Edinb.

Take of
Sweet mercury,
Golden sulphur of antimony, each six drams;
Extract of gentian,
Castile soap, each two drams.
Grind the mercury with the sulphur of antimony, that they may be intimately mixed; then add the extract and soap, and form them into a proper mass with simple syrup.

It has been thought that the antimony in this preparation disposes the mercury more especially to the skin. These pills have been accordingly employed, and with success, in many cutaneous affections, in chronic rheumatism, and in pains of the bones from a venereal affection.

PILULÆ THEBAICÆ, vulgo PACIFICÆ.

Thebaic, commonly called Pacific pills.
Edinb.

Take of
Opium, half an ounce;
Extract of liquorice, two ounces;
Castile soap, an ounce and a half;
Jamaica pepper, one ounce.
Soften the opium and extract separately with proof-spirit, and having beat them into a pulp, mix them; then add the soap, and the pepper beat into a powder; and lastly, having beat them well together, form the whole into a mass.

PILLS similar to the above were contrived by a chemical empiric, Starkey, and communicated by him to Matthews, under whose name they were some time ago greatly celebrated. The form here given differs considerably from the original, in omitting many ingredients of no great service. Nor indeed are any of the ingredients of much consequence, except the opium; their quantity being too inconsiderable to answer any useful purpose. Eight grains of the composition contain nearly one of opium.

PILULÆ SAPONACEÆ.

Saponaceous pills.
Lond.

Take of
Almond soap, four ounces;
Strained opium, half an ounce;
Essence of lemons, one dram.
Soften the opium with a little wine, and then beat it with the rest until they are perfectly mixed.

THIS pill is introduced in the room of Matthews's. The essence of lemons gives an agreeable flavour, makes the medicine sit easier on the stomach;

stomach, and prevents a nausea, which it would otherwise be apt to occasion. Ten grains of the pill contain nearly one grain of opium.

PILULÆ e STYRACE.

Storax pills.

Lond.

Take of

Strained storax, two ounces;

Saffron, one ounce;

Strained opium, five drams.

Beat them together till perfectly united.

THESE are contrived for dissolving more slowly in the stomach than the saponaceous or Matthews's pills, and consequently producing more gradual and lasting effects. One grain of opium is contained in five grains and four-fifths of a grain of the mass.

PILULÆ ex OLIBANO.

Olibanum pills.

Edinb. +

Take of

Olibanum, two ounces;

Myrrh, one ounce;

Opium, five drams;

Balsam of Peru, two drams;

Common syrup, a sufficient quantity.

Make them into a mass, which supplies the place of the storax pills.

PILULÆ PECTORALES.

Pectoral pills.

Edinb. +

Take of

Gum ammoniacum, half an ounce;

Balsam of Tolu, two drams;

Flowers of benzoine,

English saffron, each one dram;

Common syrup, a sufficient quantity.

Make them into a mass according to art.

THIS composition is very well

contrived for promoting expectoration, and may be usefully given in common colds, and in difficulty of breathing proceeding from viscid phlegm: the dose is from six or eight grains to a scruple or more. It is here considerably improved from the last edition: the balsam of Tolu is introduced in the room of myrrh, the flowers of benzoine for benzoine in substance, and anisated balsam of sulphur, which encumbered the old form, is omitted. Here it may be observed, that though several compositions are denominated pectorals, they are nevertheless, in virtue, very dissimilar. Thus, the pectoral decoction, the syrup, and the troches, are calculated for softening, lubricating, and incrassating thin tickling humours; whilst the pectoral pills, the elixir and the oxymel, tend to stimulate and deterge the vessels, and attenuate or dissolve thick, tenacious juices.

PILULÆ RUFI.

Rufus's pills.

Lond.

Take of

Socotorine aloes, two ounces;

Myrrh,

Saffron, each one ounce.

Make them into a mass with syrup of saffron.

PILULÆ COMMUNES, vulgo RUFI.

The common pills, vulgarly called

Rufus's pills.

Edinb.

Take of

Socotorine aloes, two ounces;

Myrrh, one ounce;

Saffron, half an ounce.

Beat them into a mass with a proper quantity of syrup.

THESE pills have long continued in practice, without any other alteration than in the syrup which the mass

mass is made up with, and in the proportion of saffron. In our last Pharmacopœia, the syrup of wormwood was ordered, which is here judiciously exchanged for that of saffron; this preserving and improving the brightness of colour in the medicine, which is usually looked upon as the characteristic of its goodness. The saffron, in the composition which is attributed to Rufus, is equal in quantity to the myrrh; and in these proportions the pill was received in our first Pharmacopœia. As the diminution afterwards made in the saffron was grounded on very absurd reasons, (viz. "lest the former quantity should occasion a *spasmus cynicus*,") the London College have now again increased it, and restored the pill to its original form. The virtues of this medicine may be easily understood from its ingredients. See *Elixir proprietatis*, page 306 and 336. The pills, given to the quantity of half a dram or two scruples, prove considerably cathartic, but they answer much better purposes in smaller doses as laxatives or alteratives.

PILULÆ STOMACHICÆ.

Stomachic pills.

Edinb.

Take of

Rhubarb, one ounce;
Socotorine aloes, six drams;
Myrrh, half an ounce;
Vitriolated tartar, one dram;
Essential oil of mint, half a dram;
Syrup of orange-peel, a sufficient quantity.

Make them into a mass.

THIS pill is intended for moderately warming and strengthening the stomach, and evacuating crude viscid humours. A scruple of the mass may be taken twice a-day.

PILULÆ SCILLITICÆ.

Squill pills.

Take of

Spanish soap, one ounce;
Gum ammoniacum,
Millepedes prepared,
Fresh squills, each half an ounce;
Balsam of Copaiba, as much as is sufficient.

Reduce them into a mass according to art.

THIS is an elegant and commodious form for the exhibition of squills, whether for promoting expectoration, or in the other intentions to which that medicine is applied. As the virtue of the compound is chiefly from the squills, the other ingredients are often varied in extemporaneous prescription: the soap is commonly omitted, as being of no great use in the quantity that goes to a dose of the composition; and other powders, as the lesser cardamom seeds, are substituted for the millepedes; whose virtues, in such small doses, are very insignificant. In any of these forms, if the squills are fresh and juicy, there is no need of balsam; but as the mass soon dries and hardens, it must be formed immediately into pills.

'To obviate this inconvenience, the Edinburgh College direct the dried root as follows:

'Take of

Gum ammoniac,
Lesser cardamom seeds in powder,
Extract of liquorice, each one dram;
Dried root of squills in fine powder, one scruple.

Mix, and form them into a mass with simple syrup.'

PILULÆ e CUPRO.*Copper pills.**Edinb.*

Take of

Cuprum ammoniacum, sixteen grains;

Crumb of bread, four scruples;

Spirit of sal ammoniac, as much as is sufficient to form them into a mass, which is to be divided into thirty-two equal pills.

Each of these pills weigh about three grains; and contain somewhat more than half a grain of the cuprum ammoniacum. The above pills seem to be the best form of exhibiting this medicine; for the effects of which, see CUPRUM AMMONIACUM.

PILULÆ AD DYSENTERIAM.*Pills against the dysentery.*

Take of

Yellow wax, half an ounce;

Spermaceti,

Japan earth, each one dram;

Oil of cinnamon, twelve drops.

Make them into a mass.

This medicine has often been of great benefit for the purpose expressed in its title, at the same time strengthening the intestines, and covering them with a soft mucus, which defends them from being irritated by the acrimony of the humours. Each half dram of the mass may be formed into five or six pills for one or two doses.

PILULÆ PICEÆ.*Tar pills.*

Take any quantity of tar, and mix with it as much powdered elecampane root as will reduce it to a proper thickness for being formed into pills.

The powder here mixed with the

tar, though of no great virtue, is nevertheless a very useful addition, not only for procuring it a due consistence for taking, but likewise as it divides the resinous texture of the tar, and thus contributes to promote its solution by the animal juices. In the Edinburgh infirmary, half a dram of the mass, made into middle-sized pills, is given every morning and evening, in disorders of the breast, scurvy, &c.

PILULÆ ROBORANTES.*Strengthening pills.*

Take of

1.

Hard extract of Peruvian bark, one dram;

Salt of steel, ten grains;

Oil of cinnamon, five drops;

Balsam of Peru, as much as will reduce them into a mass.

2.

Take of

Olibanum, one dram;

Styptic powder, two scruples;

Salt of steel, one scruple;

Syrup of sugar, a sufficient quantity to make them into a mass.

In a lax state of the fibres, debilities of the nervous system, and some decays of constitution, the first of these compositions is an effectual strengthener and restorative: if the quantity above prescribed is made into twenty pills, one or two of these may be taken for a dose, and repeated twice a-day. The other is a stronger styptic, and is used for restraining immoderate alvine evacuations, and sanguineous or ferous discharges from remoter parts.

3.

Take of

Aromatic species,

Extract of gentian, each one dram;

Extract of Peruvian bark, half a dram;

Elixir

Elixir of aloes, as much as will reduce them into a mass.

THESE pills are serviceable for warming and strengthening a weak cold stomach, expelling flatulences, and promoting digestion. If ten pills are made out of a dram of the mass, two may be taken thrice a-day, about an hour before meals.

PILULÆ E SPERMATE CETI.

Spermaceti pills.

Take of

Spermaceti, one dram;

White sugar-candy in powder, two drams;

Balsamic syrup, as much as is sufficient.

Grind the spermaceti with the sugar till they are perfectly mixed; then adding the syrup, rub them with a warm pestle into an uniform mass.

WHERE spermaceti cannot be commodiously exhibited in any other form, three or four moderate-sized pills, made from this mass, may be taken two or three times a-day, in erosions of the viscera by acrimonious humours, tickling coughs, and other like disorders.

C H A P IV.

B O L U S E S.

BOLUSES differ little in consistence from electaries, being only somewhat stiffer, so as to retain their figure without spreading or falling flat.

This form is very convenient for the exhibition of the more powerful medicines, which require their dose to be exactly adjusted, as the stronger alexipharmacs, cathartics, and opiates. As boluses are chiefly intended for immediate use, volatile salts, and other materials, which, if the mass was to be kept, would exhale or swell it, are frequently admitted into them.

The quantity of a bolus very seldom exceeds a dram: if the ingredients are of the lighter kind, even this will be too bulky to be commodiously swallowed down.

The lighter powders are made up with syrup; a scruple or twenty-six grains of the powder, with as much syrup as will bring it to a due consistence, makes a bolus sufficiently large.

The more ponderous powders, as the mercurial ones, are commonly made up with conserve: syrups scarce

holding them together. For the testaceous powders also an addition of conserve is used; though if made up with this alone, they would be too bulky.

Both the light and ponderous powders may be conveniently made up with mucilage, which increases the bulk less than the other additions, and occasions them to pass down more freely.

The officinal pharmacopœias have no formula of this kind: most of the following compositions are taken from our hospitals.

BOLUS ALEXIPHARMACUS.

Alexipharmac bolus.

Take of 1.

Compound powder of contrayer-
va, half a scruple;

Syrup of wild poppies, a sufficient quantity to make it into a bolus.

2.

Take of

Contrayerva root, half a scruple;

Syrup of saffron, as much as is sufficient.

Make them into a bolus.

3.

Take of

Virginian Snakeroot, half a scruple;

Confection of kermes, as much as is sufficient.

Mix and make them into a bolus.

4.

Take of

Virginian Snakeroot,

Contrayerva root, each eight grains;

Saffron, three grains;

Syrup of meconium, a sufficient quantity to reduce them into a bolus.

5.

Take of

Virginian Snakeroot, fifteen grains;

Castor, ten grains;

Syrup of sugar, as much as is sufficient.

Mix and make them into a bolus.

6.

Take of

Camphor, two grains;

Saffron, five grains;

Cordial confection, one scruple;

Mix and make them into a bolus.

7.

Take of

Camphor, two grains;

Nitre,

Contrayerva root, each ten grains;

Syrup of clove-julyflowers, as much as will make them into a bolus.

8.

Take of

Musk, ten grains;

Cordial confection, one scruple.

Make them into a bolus.

9.

Take of

Musk, ten grains;

Salt of hartshorn, or of sal ammoniac, five grains;

Thebaic extract, half a grain;

Syrup of saffron, a sufficient quantity.

Make them into a bolus.

THESE boluses are designed for low depressed fevers, in which medicines of this kind are generally prescribed, for keeping up the vis vitæ, raising the pulse, and promoting a diaphoresis. The compositions differ in strength nearly according to the order in which they stand. The two last are of great power, and are designed chiefly for cases accompanied with convulsive symptoms, which are often abated by them.

BOLUS EX ALUMINE.

Alum bolus.

Take of

Alum,

Extract of Peruvian bark,

Nutmeg, each ten grains;

Simple syrup, as much as will reduce them into a proper consistence for a bolus.

THIS composition is a very strong astringent, and as such is used with success in violent uterine hæmorrhagies, and other immoderate secretions which require to be speedily restrained. It may be taken twice a-day; or if the flux is very violent, every four or six hours till it abates.

BOLUS E CAMPHORA.

Camphor bolus.

Take of

Camphor, half a scruple;

Gum Arabic, half a dram;

Syrup of marshmallows, a sufficient quantity to make them into a bolus.

THIS is a very convenient form for the exhibition of camphor: this drug, however, when thus given by itself in large doses, is apt to nauseate the stomach; and rarely has

so

so good effects as when mixed in small quantities with nitre or other like substances, and frequently repeated.

BOLUS E CASTOREO.

Castor bolus.

Take of

Castor, one scruple;
Salt of hartshorn five grains, or
oil of hartshorn five drops;
Simple syrup, a sufficient quantity.

Make them into a bolus.

THIS medicine is given in hysterical and hypochondriacal disorders, and likewise as an alexipharmac in fevers. Its virtues, which are great and unquestionable, seem to depend more upon the fetid animal oil, or volatile salt, than on the drug from which it takes its name.

BOLUS CATHARTICUS.

Purgative bolus.

Take of

1.

Rhubarb, half a dram;
Soluteve syrup of roses, a sufficient quantity to make a bolus.

Take of

2.

Jalap, one scruple;
Jamaica pepper;
Crystals of tartar, each five grains;
Syrup of buckthorn, as much as will reduce them into a mass of a due consistence.

Take of

3.

Scammony, ten grains;
Soluble tartar, one scruple;
Soft extract of liquorice, a sufficient quantity.

Let the scammony be well ground with the soluble tartar; then add the extract, and make them into a bolus.

Take of

4.

Gamboge,

Crystals of tartar, each eight grains;

Syrup of ginger, a sufficient quantity to reduce them into a bolus.

Take of

5.

Elaterium, two grains;
Extract of jalap, half a scruple;
Crystals of tartar, one scruple;
Syrup of orange-peel, a sufficient quantity to make them into a bolus.

THE virtues of these compositions are sufficiently obvious; the first is a mild purgative; the two last too strong to be in general ventured on; and the other two, of intermediate degrees of strength.

BOLUS CATHARTICUS CUM MERCURIO.

Purgative bolus with mercury.

Take of

1.

Jalap, one scruple;
Mercurius dulcis, five grains;
Soluteve syrup of roses, as much as is sufficient to make them into a bolus.

Take of

2.

Gamboge, seven grains;
Mercurius dulcis,
Aromatic species, each half a scruple;
Syrup of buckthorn, a sufficient quantity to make a bolus.

THE first of these compositions is a safe and mild mercurial cathartic; the second is too strong for general use.

BOLUS DIAPHORETICUS.

Diaphoretic bolus.

Take of

Compound powder of contrayerva,
Crude sal ammoniac, each one scruple;

Simple

Simple Syrup, a sufficient quantity to form them into a bolus.

THIS bolus is given in fevers, and other cases where a diaphoresis is to be promoted. Sal ammoniac is for this purpose one of the most efficacious of the neutral salts. It requires, however, when thus given in a solid form, to be assisted by warm diluents frequently repeated; which not only promote its action, but likewise prevent its sitting uneasy on the stomach.

BOLUS DIURETICUS.

Diuretic bolus.

Take of

Fresh squills, six grains;

Compound powder of arum, ten grains;

Ginger, five grains;

Syrup of orange-peel, a sufficient quantity.

Make them into a bolus.

THIS composition is recommended by Dr Mead, to be taken every morning in hydropic cases, for promoting urine. He observes, that in these disorders, diuretic medicines vary greatly in their effects, those which answer sufficiently in one person, failing in another; and that the squill and its preparations are of all others those which most generally succeed.

BOLUS AD DYSENTERIAM.

Bolus against the dysentery.

Take of

The cordial confection,

French bole, each one scruple;

Thebaic extract, one grain.

Make them into a bolus.

THIS composition is excellently well calculated for the purpose expressed in its title. Dr Mead assures us, that he has never found any one

medicine more effectual, either for restraining the flux, or healing the exulcerated membranes. Previous to the use of this or other like medicines, the first passages must be cleansed by mild emetics and cathartics, as ipecacuanha and rhubarb. See page 614.

BOLUS EMMENAGOGUS.

Emmenagogue bolus.

Take of

1.

Socotorine aloes, eight grains;

Saffron, four grains;

Guinea pepper, two grains;

Oil of favin, two drops;

Conserve of rue, as much as is sufficient to reduce them into a due consistence.

Take of

2.

Salt of steel, one grain;

Myrrh, half a scruple;

Cordial confection, fifteen grains.

Make them into a bolus.

Take of

3.

Black hellebore root, eight grains;

Fresh squills, four grains;

Essential oil of pepper-mint, two drops;

Conserve of orange-peel, as much as is sufficient to make them into a bolus.

ALL these are medicines of great power for promoting or exciting the menstrual flux. The two first are calculated for lax phlegmatic habits; the third, for persons of a sanguine temperament, where chalybeate medicines cannot be borne.

BOLUS FEBRIFUGUS.

Febrifuge bolus.

Take of

Peruvian bark, one scruple;

Cascarilla, half a scruple;

Mucilage of quince seeds, a sufficient.

Q q

sufficient quantity to make them into a bolus.

THIS elegant composition is excellently well adapted to the cure of intermittent fevers; and may be given in cases where the Peruvian bark by itself would be less proper. Where aromatics, chalybeates, bitters, &c. are also requisite, they are either to be premixed, or occasionally interposed. See page 201.

BOLUS HYSTERICUS.

Hysteric bolus.

Take of

Musk,

Asafetida, each six grains;

Castor, half a scruple;

Syrup of saffron, as much as is sufficient to make them into a bolus.

THIS medicine is a very well contrived one for the purpose expressed in its title. It is of great service both in hysterical and hypochondriacal disorders; and often gives relief in the depressions, faintings, flatulent colics, headaches, and other symptoms attending them. It may be taken twice a-day, along with any suitable liquor.

BOLUS ILIACUS.

Iliac bolus.

Take of

Cathartic extract, one scruple;

Thebaic extract, one grain.

Make them into a bolus.

THIS bolus is prescribed by Dr Mead, for easing the pain, and procuring stools, in the iliac passion and dry belly-ach; where the irritating cathartics, exhibited by themselves, are thrown up by vomit. The use of this medicine is to be preceded by plentiful bleeding, and accompanied with purgative glysters of

3

the more acrid kind; and its operation promoted by infusion of senna mixed with a little of the elixir salutaris, or tincture of senna.

BOLUS MERCURIALIS.

Mercurial bolus.

Take of

Calomel, from five to fifteen grains;

Conserve of roses, half a dram.

Mix and make them into a bolus.

THIS bolus is given every night, or oftener, for raising a salivation, in venereal, and other disorders, which require that Herculean operation. It is likewise taken at night as an alterative, to be carried off next morning by a cathartic: mercurials, exhibited in this manner, have generally better effects than when joined with purgatives directly.

BOLUS MERCURIALIS EMETICUS.

Emetic mercurial bolus.

Take of

Yellow emetic mercury, six grains;

Conserve of roses, a sufficient quantity.

Make them into a bolus.

THIS strong emetic is given in venereal and leprous diseases; particularly in the case of foul ulcers of long standing, the cleansing and cure of which are frequently promoted by it. The violence of its operation limits its use to robust constitutions.

BOLUS PECTORALIS.

Pectoral bolus.

Take of

Spermaceti, fifteen grains;

Gum ammoniacum, ten grains;

Salt of hartshorn, five grains;

Simple syrup, as much as is sufficient.

Mix

Mix and make them into a bolus.

IN colds of long standing, old coughs, and asthmas, this bolus generally gives relief; especially if bleeding is premised, and repeated, if necessary, at proper intervals.

BOLUS RHEI CUM MERCURIO.

Bolus of rhubarb with mercury.

Take of

Choice rhubarb, twenty-five grains;

Calomel, five grains;

Simple syrup, as much as will form them into a bolus.

THIS is a very mild mercurial purgative. It is given to destroy worms, and in cachectic, chlorotic, and other like disorders.

BOLUS RHEUMATICUS.

Rheumatic bolus.

Take of

Extract of guaiacum, half a dram;

Salt of hartshorn, seven grains;

Simple syrup, a sufficient quantity.

Make them into a bolus.

IN chronical rheumatisms, whether the remains of a rheumatic fever, or a continuation of pains that proceeded at first from neglected colds, this bolus has been given with good effects, once a-week or oftener: the patient keeping warm and drinking warm liquors, to promote its operation as a cathartic and diaphoretic. Its use ought to be accompanied by venesection, which is to be repeated every eight or ten days as long as the blood is fizy. This medicine is likewise exhibited in sciatic, arthritic, and other pains not accompanied with a siziness of blood: in these it much more frequently fails than in the true rheumatism.

BOLUS SCILLITICUS.

Scillitic bolus.

Take of

Fresh squills, twelve grains;

Aromatic species, half a scruple;

Oil of pepper-mint, one drop.

Beat them well together into an uniform mass, of a due consistence for a bolus.

THIS is a warm, stimulating, and attenuating medicine, and may be given to great advantage in cases where the natural secretions are obstructed or suppressed from a 'laxity of the solids.' The efficacy of the squills is promoted by the additional ingredients, which at the same time warm and strengthen the stomach and intestines, and prevent the composition from being thrown up by vomit, which this quantity of squills, given by itself, would in many constitutions be.

BOLUS THERIACALIS.

Treacle bolus.

Take of

Theriaca, two scruples;

Salt of hartshorn, seven grains;

Camphor, three grains.

Mix and form them into a bolus.

CAMPHOR and salt of hartshorn, when thus joined with opiates, have in many cases better effects than if exhibited by themselves, their diaphoretic virtue being greatly promoted by the relaxation which the opium occasions. The quantity of theriaca in this bolus contains somewhat more than a quarter of a grain of opium.

BOLUS SUDORIFICUS.

Sudorific bolus.

Take of

Camphor, five grains;

Thebaic extract, one grain;

Syrup of orange-peel, a sufficient

Q q 2 quantity

quantity to reduce them into a bolus.

THIS medicine is one of the most effectual sudorifics, generally exciting a copious sweat. In many cases, where this intention is to be answered, whether acute or chronic, it may be given to great advantage.

BOLUS TEREBINTHINATUS.
Turpentine bolus.

Take of
Chio turpentine, one scruple;
Powdered liquorice, a sufficient quantity.
Make them into a bolus.

THIS is a convenient form for the exhibition of turpentine, the liquorice powder answering the same intention here as the elecampane root in the *Pilula piceæ*, page 604.

CHAP.

C H A P. V.

E L E C T A R I E S.

EL E C T A R I E S are composed chiefly of powders mixed up with syrups, &c. into such a consistence, that the powders may not separate in keeping, that a dose may be easily taken up on the point of a knife, and not prove too stiff to swallow.

Electaries receive chiefly the milder alterative medicines, and such as are not ungrateful to the palate. The more powerful drugs, as cathartics, emetics, opiates, and the like, (except in officinal electaries to be dispensed by weight), are seldom trusted in this form, on account of the uncertainty of the dose; disgustful ones, acrids, bitters, fetids, cannot be conveniently taken in it; nor is the form of an electary well fitted for the more ponderous substances, as mercurials, their being apt to subside in keeping, unless the composition is made too stiff.

The lighter powders require thrice their weight of honey, or syrup boiled to the thickness of honey, to make them into the consistence of an electary; of syrups of the common consistence, twice the weight of the powder is sufficient.

Where the common syrups are

employed, it is necessary to add likewise a little conserve, to prevent the compound from drying too soon. Electaries of Peruvian bark, for instance, made up with syrup alone, will often in a day or two grow too dry for taking.

Some powders, especially those of the less grateful kind, are more conveniently made up with mucilages than with syrups, honey, or conserve. The three latter stick about the mouth and fauces, and thus occasion the taste of the medicine to remain for a considerable time; whilst mucilages pass freely, without leaving any taste in the mouth. A little soft extract of liquorice, joined to the mucilage, renders the composition sufficiently grateful, without the inconveniences of the more adhesive sweets.

The quantity of an electary directed at a time, in extemporaneous prescription, is rarely less than an ounce, or more than three ounces.

General rules for making electaries.

I.

The rules already laid down for decoctions and powders in general,

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are

are likewise to be observed in making decoctions and powders for electaries [E.] +

II.

Gums, inspissated juices, and such other substances as are not pulverable, should be dissolved in the liquor prescribed: then add the powders by little and little, and keep the whole briskly stirring, so as to make an equable and uniform mixture [E.] +

III.

Astringent electaries, and such as have pulps of fruits in their composition, should be prepared only in small quantities at a time [E.] +

For astringent medicines lose greatly of their virtue on being kept in this form, and the pulps of fruits are apt to become sour.

IV.

The superfluous moisture of the pulps should be exhaled over a gentle fire, before the other ingredients are added to them [E.] +

V.

Electaries, if they grow dry in keeping, are to be reduced to the due consistence, with the addition of a little Canary wine [L. E.] + and not with syrup or honey: by this means, the dose will be the least uncertain; a circumstance deserving particular regard, in those especially which are made up with syrup, and contain a large quantity of opium, as the *Confectio Paulina*, and *Philonium* [L.]

ELECTARIUM ad DYSENTERICOS.

Antidysenteric electary.
Edinb. +

Take of

Japonic confection, two ounces;
Locatelli's balsam (beaten up with a sufficient quantity of yolk of eggs) one ounce;

Powdered rhubarb, half an ounce;
Syrup of marshmallows, a sufficient quantity.

Mix and make them into an electary.

THIS composition is extremely well contrived for the purpose expressed in its title. Astringents or opiates by themselves rarely have place in dysenteries, even after the first passages have been evacuated by an emetic or a full dose of rhubarb: they ease the pain and moderate the flux for a time; but the short relief is apt to be followed by dangerous or even fatal consequences from the retention of the acrid and corrupted humours. The rhubarb, which the College of Edinburgh has now added from the practice of the infirmary, in good measure prevents this accumulation, without much counteracting the salutary effects of the other materials; in many cases, however, it may be still necessary to interpose that laxative drug by itself. The dose of the electary is the bulk of a large nutmeg, once or twice a day, according to the urgency of the symptoms. One dram contains about one sixth part of a grain of opium.

ELECTARIUM e BACCIS LAURI.

Electary of bay-berries.
Lond.

Take of

Rue leaves dried,
Caraway seeds,
Parsley seeds,
Bay-berries, each one ounce;
Sagapenum, half an ounce;
Black pepper,
Russia castor, each two drams;
Clarified honey, thrice the weight of the powdered species.

Mix the species with the honey, and make them into an electary.

THIS

THIS composition is sometimes taken, in flatulent colics and hysterical disorders, from a scruple to two drams: but its principal use is in carminative glysters, nor is it often employed in these. The College of Edinburgh have entirely dropt it.

ELECTARIUM e CASIA.

*Electary of casia.**Lond.*

Take of

Solvative syrup of roses,

Pulp of casia, fresh extracted, each half a pound;

Manna, two ounces;

Pulp of tamarinds, one ounce.

Grind the manna in a mortar; and, with a gentle heat, dissolve it in the syrup: then add the pulps, and continue the heat until the whole is reduced to a due consistence.

ELECTARIUM e CASIA,

vulgo DIACASIA.

*Electary of casia, commonly called Diacasia.**Edinb.*

Take of

Pulp of casia fistularis, six ounces;

Pulp of tamarinds,

Manna, each an ounce and a half;

Syrup of pale roses, six ounces;

Having beat the manna in a mortar, dissolve it with a gentle heat in the syrup; then add the pulps, and evaporate them with a regularly continued heat to the consistence of an electary.

THESE compositions are very convenient officinals, to serve as a basis for purgative electaries and other like purposes; as the pulping a small quantity of the fruits, for extemporaneous prescription, is sufficiently troublesome: the tamarinds give them a pretty taste, and do not subject them, as might be expected, to turn sour: after standing for four

months, the composition was found no sourer than when first made up. They are likewise usefully taken by themselves, in the quantity of two or three drams occasionally, for gently loosening the belly in costive habits.

ELECTARIUM LENITIVUM.

*Lenitive electary.**Lond.*

Take of

Figs, one pound;

Senna, eight ounces;

Pulp of tamarinds,

Pulp of casia,

Pulp of French prunes, each half a pound;

Coriander seeds, four ounces;

Liquorice, three ounces;

Double-refined sugar, two pounds and a half.

Pulverize the senna along with the coriander seeds, and sift out ten ounces of the powder: the remainder is to be boiled with the figs and liquorice, in four pints of water, to one half; then strain and press out the liquor, and evaporate it to the weight of a pound and a half, or somewhat less: in this dissolve the sugar, so as to make it into a syrup, and add this syrup, by little and little, to the pulps: lastly, mix in the powder before separated by the sieve.

THIS electary may be occasionally taken to the quantity of a nutmeg or more, for loosening the belly in costive habits.

Edinb.

Take of

Pulp of French prunes, one pound;

Pulp of casia,

Pulp of tamarinds, each two ounces and a half;

Black syrup of sugar, commonly called

Q 94

called *molasses*, one pound and a half;

Senna leaves in fine powder, four ounces;

Coriander seeds in fine powder, half an ounce.

Having boiled the pulps with the syrup to the consistence of honey, add the powders, and beat the whole into an electary.

THIS electary is now freed from some superfluous ingredients which were left in it at former revisions; viz. polypody roots, French mercury leaves, fenugreek seeds, and linseed. Melasses is preferable to either honey or sugar, as it coincides with the intention; and is not only of itself inapt to ferment, but likewise prevents such substances as are this way disposed from running into fermentation.

ELECTARIUM PECTORALE.

Pectoral electary.

Edinb. +

Take of

Rob of elder berries, two ounces;
Spermaceæ dissolved in a sufficient quantity of yolk of eggs, half an ounce;

Flowers of benzoin, one dram;
Balsamic syrup, as much as is sufficient to make the other ingredients into an electary.

THIS is a very useful medicine, in tickling coughs and common colds; calculated both to obtund acrimony and promote expectoration. It may be used two or three times a-day, in doses of about the quantity of a small nutmeg. Taken to the bulk of a large nutmeg, at bed-time, it generally not only relieves the breast, but tends to procure a salutary diaphoresis or sweat in the night. It is here improved from the former editions, by substituting rob

of elder berries to conserve of roses, and spermaceæ to compound powder of gum tragacanth.

ELECTARIUM e SCAMMONIO.

Electary of scammony.

Lond. +

Take of

Scammony, an ounce and a half;
Cloves,

Ginger, each six drams;

Essential oil of caraway seeds, half a dram;

Honey, half a pound.

Let the spices be ground together, and mixed with the honey; then add the powdered scammony, and afterwards the oil.

THIS electary is a warm, brisk purgative. It is a reform of the *Electarium caryocostinum* of our preceding dispensatories, a composition which was greatly complained of, as being inconvenient to take, on account of the largeness of its dose. A dram and a half of this, which contains fifteen grains of scammony, is equivalent to half an ounce of the other.

ELECTARIUM e SCORDIO.

Electary of scordium, commonly called Diascordium.

Lond.

Take of

The species of scordium with opium, any quantity;

Syrup of meconium, boiled to the consistence of honey, thrice as much by weight.

Mix the species with the syrup, so as to make an electary.

IN our former dispensatories, the species were ordered to be made up with honey: this is now exchanged for a syrup, more agreeable to the intention of the medicine, which is that of an opiate astringent, whilst honey

honey is manifestly aperient and detergent. It is not perhaps necessary, for the purposes of the shops, to make the species into an electary at all: by keeping in this form, the ingredients lose greatly of their aromatic flavour and astringency, becoming soft and smooth upon the palate; and the red colour, imparted by the bole, decays. The London College have therefore very justly ordered them to be kept in powder as well as in an electary; and directed the powder both with and without opium, for different occasions. See *Species e scordio*, and *Pulvis e bolo, cum et sine opio*. Either of these powders may be made up extemporaneously into an electary, with any syrup that shall be judged proper.

Diascordium was intended by its author Fracastorius for an antipellential: but we have been so happy as to have little occasion for medicines in that intention; nor could this be anywise depended on. It is a moderately warm astringent and opiate; and in this light only is considered by the present practice. One grain of opium is contained in nine scruples of the electary.

The *Species e scordio*, which make the basis of this electary, contain, as we have already seen (page 581) several superfluous ingredients; for though the London College has given a judicious reformation of the powder under the title of *Pulvis e bolo*, the electary is made with the powder unreformed; partly, that no material alteration might be made in a medicine which is so much depended on, and whose effects have been so long experienced; and partly because the physician, if he prefers the *Pulvis e bolo*, may direct an electary to be made with it in extemporaneous prescription. In the Edinburgh Pharmacopœia, this medicine is not ordered to be kept in

powder, but the electary is reformed to a great degree of elegance and simplicity. And as the ingredient from which it received its name, being a very unimportant one, is now omitted, the composition is distinguished by another title, viz.

ELECTARIUM JAPONICUM, vulgo CONFECTIO JAPONICA.

Japonic electary, commonly called Japonic confection.
Edinb.

Take of

Japan earth, four ounces;
Gum kino, three ounces;
Cinnamon,
Nutmeg, each one ounce;
Opium diffused in a sufficient quantity of Spanish white wine, one dram and a half;
Syrup of dried roses boiled to the consistence of honey, two pounds and a quarter.

Mix and form them into an electary.

THE ingredients in this electary seem extremely well chosen, and are so proportioned to one another, that the quantity of opium is the same as in the diascordium of the former pharmacopœias of Edinburgh, viz. one grain in ten scruples. The gum kino, now substituted to the tormentil root, is an excellent improvement in the formula.

BALSAMUM LOCATELLI.

Locatelli's balsam.
Lond.

Take of

Oil olive, one pint;
Straßburgh turpentine,
Yellow wax, each half a pound;
Red saunders, six drams.

Melt the wax over a gentle fire with some part of the oil; then add the rest of the oil and the turpentine; afterwards mix in the saunders, and keep them stirring together,

ther, until the mixture is grown cold.

Edinb. +

Take of

Yellow wax, one pound;
Oil olive, a pint and a half;
Chio or Strasburgh turpentine, a pound and a half;
Balsam of Peru, two ounces;
Dragon's blood, in powder, one ounce.

Melt the wax in the oil over a gentle fire, then add the turpentine; and having taken them from the fire, mix in the balsam of Peru and dragons blood, keeping them continually stirring till grown cold.

DRAGONS blood gives a more elegant colour to this composition than red saunders, though on another account it is somewhat less proper, having been found, when dissolved in oil, to communicate some degree of heat and pungency, qualities quite foreign to the intention of the medicine. This balsam is used in internal bruises and hæmorrhagies, erosions of the intestines, dysenteries, and in some kinds of coughs and asthmas: the dose is from two scruples to two drams: it may be commodiously taken with about double its weight of conserve of roses: as directed hereafter. Some have likewise applied it externally, for deterging and incarnating recent wounds and ulcers.

BALSAMUM CEPHALI- CUM.

Cephalic balsam.

Edinb. +

Take of

Expressed oil of nutmegs, one ounce;
Distilled oil of cloves,
of lavender,

Distilled oil of rosemary, each half a dram;

Distilled oil of amber, half a scruple;
Balsam of Peru, one dram.

Liquefy the oil of nutmegs in a silver vessel; and when taken from the fire, mix into it the distilled oils and the balsam, according to art.

THIS medicine is recommended to be rubbed on the temples, and on paralytic limbs, for warming the part and comforting the nerves; and to be smelt to, for refreshing and enlivening the spirits. Some have also given it inwardly as a warm cordial, in languid cases, and in debilities of the nervous system. There are abundance of preparations of this kind in foreign pharmacopœias, composed each of only one essential oil, incorporated with the expressed oil of nutmegs; which last is to be previously freed from its flavour (by distillation with water) that the smell of the former may not be injured thereby: in the room of this prepared sebaceous matter, a mixture of white wax and oil olive might be used. In the *Practical Chemistry*, a general process is given for the making of these kinds of preparations, under the title of

BALSAMUM ODORIFERUM.

An odoriferous balsam

Take of

Oil olive,

White bees wax, each two ounces.

Put the oil into a china basin, placed in a pan of boiling water, and slice the wax into it. Stir them together with a clean knife, or small spatula, till the wax is melted: then remove the vessel out of the hot water, and when the matter begins to thicken, drop in four drams of any odoriferous essential oil, as that of cinnamon, nutmegs, mace, lemon-peel, rhodium,

dium, lavender, rosemary, &c. or of a mixture of two or three of these oils: to which may be added one dram of essence of ambergris, which will heighten the smell of the oils, without communicating any of its own. Keep the whole constantly stirring, that they may be perfectly mixed; and as soon as this is done, plunge the vessel into cold water, to prevent the dissipation of the essential oils.

THESE kinds of balsams may be made of any colour, so as to resemble in this respect also, as well as in smell, the vegetable from which the essential oil you make use of was drawn. A little of the pigment, called by the painters *sap-green*, being previously ground with the oil olive, will give a fine green; a little cinnabar, a scarlet; turmeric, a lemon colour; Prussian blue, a violet; and cochineal, a fine purplish hue.

CONFECTIO PAULINA.

The confection called Paulina.
Lond.

Take of

Costus, or in its stead zedoary,
Cinnamon,
Long pepper,
Black pepper,
Storax,
Galbanum, } strained,
Opium, }
Ruffia castor, each two ounces;
Simple syrup, boiled to the consistence of honey, thrice the weight of the other ingredients.

Warm the syrup, and carefully mix with it the opium first dissolved in wine: gradually add this mixture, whilst it continues warm, to the storax and galbanum previously melted together; and afterwards sprinkle in the other species reduced into powder.

THIS is the CONFECTIO ARCHIGENIS of our former dispensatory, brought back to its first form and author. It is a warm opiate medicine, and as such is sometimes made use of in practice: thirty-two grains contain one grain of opium.

MITHRIDATIUM, five CONFECTIO DAMOCRATIS.

*Mithridate, or the confection of
Damocrates.*
Lond.

Take of

Cinnamon, fourteen drams;
Myrrh, eleven drams;
Agaric,
Indian nard,
Ginger,
Saffron,
Seeds of mithridate mustard,
Frankincense,
Chio turpentine, each ten drams;
Camels hay,
Costus, or in its stead zedoary,
Indian leaf, or in its stead mace,
Stechas,
Long pepper,
Hartwort seeds,
Hypocistis,
Storax strained,
Opopanax,
Galbanum strained,
Opobalsam, or in its stead expressed oil of nutmegs,
Ruffia castor, each one ounce;
Poley mountain,
Scordium,
Carpobalsam, or in its stead cubeb.
White pepper,
Candy carrot seed,
Bdellium strained, each seven drams;
Celtic nard,
Gentian root,
Dittany of Crete,
Red roses,
Macedonian parsley seed,
Lesser cardamom seeds, husked,
Sweet fennel seed,

Gum

Gum Arabic,
Opium strained, each five drams;
Calamus aromaticus,
Wild valerian root,
Aniseed,
Sagapenum, strained, each three
drams;
Meum athamanticum,
St John's wort,
Acacia, or in its stead terra Japo-
nica,
Bellies of skinks, each two drams
and a half;
Clarified honey, thrice the weight
of all the other ingredients.

Warm the honey, and mix with it
the opium dissolved in wine; melt
the storax, galbanum, turpentine,
and opobalsam (or expressed oil
of nutmegs) together in another
vessel, continually stirring them
about, to prevent their burning;
with these so melted, mix the hot
honey, at first by spoonfuls, and
afterwards in larger quantities at
a time; when the whole is grown
almost cold, add by degrees the
other species reduced into pow-
der.

THERIACA ANDROMA- CHI.

Venice treacle.

Lond.

Take of

Troches of squills, half a pound;
Long pepper,
Opium strained,
Vipers dried, each three ounces;
Cinnamon.
Opobalsam, or in its stead expres-
sed oil of nutmegs, each two
ounces;
Agaric,
Florence orris root,
Scordium,
Red roses,
Navew seeds,
Extract of liquorice, each an
ounce and a half;
Indian nard,

Saffron,
Amomum,
Myrrh,
Costus, or in its stead zedoary,
Camels hay, each one ounce;
Cinquefoil root,
Rhubarb,
Ginger,
Indian leaf, or in its stead mace,
Dittany of Crete,
Horehound leaves,
Calamint leaves,
Stechas,
Black pepper,
Macedonian parsley seed,
Olibanum.
Chio turpentine,
Wild valerian root, each six
drams;
Gentian root,
Celtic nard,
Spignel,
Poley mountain } leaves,
St John's wort }
Groundpine }
Germander tops, with the seed,
Carpobalsam, or in its stead cu-
bebs,
Aniseed,
Sweet fennel seed,
Lesser cardamom seeds, husked,
Bishops-weed } seeds,
Hartwort }
Treacle mustard }
Hypocistis,
Acacia, or in its stead Japan
earth,
Gum Arabic,
Storax strained,
Sagapenum, strained,
Terra Lemnia, or in its stead
hole armenic or French bole,
Green vitriol calcined, each half
an ounce;
Small (or in its stead, the long)
birthwort root,
Lesser centaury tops,
Candy carrot seed,
Opopanax,
Galbanum strained,
Russia castor,

Jews pitch, or in its stead white amber, prepared,

Calamus aromaticus, each two drams;

Clarified honey, thrice the weight of all the other ingredients.

Let these ingredients be mixed together, after the same manner as directed in making the mithridate.

THESE celebrated electaries are almost the only remains which the late reformation has left in the shops, of the wild exuberance of composition which the superstition of former ages brought into vogue. The theriaca is a reformation of mithridate, made by Andromachus physician to Nero: the mithridate itself, is said to have been found in the cabinet of Mithridates King of Pontus. The first publishers of this pompous arcanum were very extravagant in their commendations of its virtues; the principal of which was made to consist in its being a most powerful preservative against all kinds of venom: whoever took a proper quantity in a morning, was ensured from being poisoned during that whole day: this was confirmed by the example of its supposed inventor, who, as Celsus informs us, was by its constant use so fortified against the commonly reputed poisons, that none of them would have any effect upon him when he wanted their assistance. But the notions of poisons which prevailed in those ruder ages were manifestly erroneous. Before experience had furnished mankind with a competent knowledge of the powers of simples, they were under perpetual alarms from an apprehension of poisons, and busied themselves in contriving compositions which should counteract their effects, accumulating together all those substances which they imagined to be possessed of any de-

gree of alexipharmac power. Hence proceed the voluminous antidotes which we meet with in the writings of the ancient physicians: yet it does not appear, that they were acquainted with any real poison, except the cicuta, aconitum, and bites of venomous beasts; and to these they knew of no antidote whatever. Even admitting the reality of the poisons, and the efficacy of the several antidotes separately, the compositions could no more answer the purposes expected from them, than the accumulating of all the medicinal simples into one form, could make a remedy against all diseases.

Yet, notwithstanding the absurdity in the original intention of these medicines, and their enormity in point of composition, as they contain several powerful materials, whose virtues, though greatly prejudiced, yet are not destroyed, by their multiplicity and contrariety; the compounds have been found, from repeated experience, to produce very considerable effects, as warm opiate diaphoretics.

These compositions might without doubt be lopt of numerous superfluities, without any diminution of their virtues; yet as the effects of them, in their present form, are so well known, so much regard has been paid to ancient authority, as not to attempt a reformation of that kind. The London college has however thought proper to retrench, from forms originally complex, all subsequent additions that have crept into them. Neither the description in verse of the elder Andromachus, nor the prose explanation of the younger, make any mention of the white pepper afterwards added to the theriaca; and the orris root, in the mithridate of our former pharmacopœias, is also a supernumerary ingredient, not warranted by the original: these therefore are rejected.

Nor

Nor is the *asarum* in *mithridate* grounded on any good authority: the verse it is taken from, is mutilated and corrupt; and the word which some, upon conjecture only, suppose to have been *asarum*, others, also upon conjecture, choose to read differently: till some emendation shall be better founded than merely upon critical guesses, this single species may be safely passed over without any prejudice to the medicine. None of the ancient descriptions afford any other light in this particular; for they either omit this ingredient, and others also, or abound with additions.

One innovation on both these medicines, the college has also allowed themselves. In each of these compositions are found both cinnamon and *casia lignea*; and it is very evident, from several parts of Galen's works, that the latter was used by the ancients only upon account of the great difficulty of procuring the other; so that to retain the *casia*, now that cinnamon is so common, is a blind following of these writers, without any attention to their meaning: the *casia* therefore is now rejected, and half the quantity of cinnamon put in its room; which is the proportion that Galen directs to be observed in substituting the one for the other. It is probable, that the case is the same with regard to the Celtic and Indian nard; that the first had a place in these compositions, on account of the difficulty of procuring the Indian; for Galen expressly prefers the latter.

There is a material error in regard to the *theriaca*, which has passed through all the editions of our *Pharmacopœia*, except the present: this is, the substituting Roman vitriol to the ancient *chalcitis*, now not certainly known; and, in the catalogue of simples, describing the Roman to be a blue vitriol;

whereas the Italian writers are unanimous it is a green vitriol; and were it not, it would not answer to the effects of the *chalcitis*, which was certainly a chalybeate, and gives the medicine its black colour. What has chiefly occasioned *chalcitis* to be supposed a cupreous vitriol, seems to be its name, derived from *χαλκος*, copper: but it is to be observed, that all vitriols were formerly imagined to proceed from copper, and were named accordingly: the green or martial vitriols are still called by the Germans *Kupferwasser*, and by us *copperas*. It is probable, that the ancient *chalcitis* was no other than a native martial vitriol, calcined by the heat of those warm climates to a degree of yellowish red or coppery colour: and therefore the common green vitriol, thus calcined by art, very properly supplies its place.

The London College has likewise somewhat facilitated the preparation of these medicines, by omitting the *trochisci cypheos* used in the *mithridate*, and the *hedychroi* and *viperini* for the *theriaca*; and inserting their ingredients, after *Zwelfer's* manner in the compositions they are intended for. This is done in the *theriaca* very commodiously; the ingredients in these troches uniting with those in the *theriaca* itself into unbroken numbers. But to render the numbers equally simple in the *mithridate*, it was necessary to retrench a few odd grains from some of the articles, and make a small addition to some others: they adjusted the proportions of the ingredients in the *trochisci cypheos* from the original description in Galen; the numbers in our former *Pharmacopœia* being very erroneous.

The College of Edinburgh, paying very little deference to antiquity or common prejudice, has ventured

tured at length to discard these venerable reliques; and have substituted in their room an elegant and simple form, equivalent to them both in efficacy, under the title of

THERIACA EDINENSIS.

Edinburgh theriaca.

Edinb.

‘In later editions they have entirely banished the name of *theriaca* from their book, and have put in its place the following preparation:

ELECTARIUM THEBAICUM.

Thebaic electary.

Edinb.

‘Take of

Powder of aromatics, six ounces;
Virginian snake-root, in fine powder, three ounces;

Opium, diffused in a sufficient quantity of Spanish white-wine, three drams;

Clarified honey, thrice the weight of the powders.

Mix them, and form an electary.’

THIS composition consists of very powerful ingredients, and is doubtless capable of answering every thing that can be reasonably expected from the more voluminous *theriaca* of Andromachus. The London College also had formerly their *theriaca* composed of the less exceptionable ingredients of Andromachus’s. But as these medicines have for a long time been chiefly employed for external purpose, by the way of cataplasm, the *Theriaca Londinensis* is now omitted, and its place supplied by a cataplasm composed of a few well-chosen articles, under the name of *Cataplasmata e cymino*; of which hereafter. For internal use, none of the *theriacas* are at present so much regarded as they have been heretofore; practitioners having in-

troduced in their room extemporaneous boluses of Virginian snake-root, camphor, contrayerva, and the like; which answer all their intentions, with this advantage, that they may be given either with or without opium, an ingredient which renders the others prejudicial in cases where they might otherwise be proper.

With regard to the quantity of opium in the foregoing compositions, one grain thereof is contained in four drams of the mithridates, in three scruples fifteen grains of the Venice treacle, and in five scruples of the *Thebaic electary*. The proportion of opium will vary a little, according to the time that they have been kept; their moisture by degrees exhaling, so as to leave the remainder stronger of the opium than an equal weight was at first. A change of this kind is taken notice of by many writers, but falsely attributed to an imaginary fermentative quality of the ingredients; by which they were supposed, from their multiplicity and contrariety, to be continually exalting and improving the virtues of one another.

A good deal of care is requisite in making these compositions, to prevent the waste which is apt to happen in the pounding, and which would render the proportion of opium to the other ingredients precarious. The intention of dissolving the opium in wine, for these and other electaries, is, that it may be more uniformly mingled with the rest.

PHILONIUM LONDINENSE.

London philonium.

Lond.

Take of

White pepper,

Ginger,

Caraway seeds, each two ounces;

Strained opium, six drams;

Syrup

Syrup of meconium, boiled to the consistence of honey, thrice the weight of the other ingredients.

Heat the syrup, and carefully mix with it the opium, previously dissolved in wine; then add the other ingredients, reduced into powder.

THIS is a reformation of the *philonium* described by Galen, which was received in our preceding Pharmacopœias with the addition of some superfluous ingredients, and distinguished, but not very properly, by the epithet *Romanum*. The additional articles, and some unnecessary ones that were in the original, are here omitted, and the quantities of the other varied, so as to preserve the same proportion of opium to the whole, as in our last Pharmacopœia. Thirty-six grains of the composition contain one grain of opium.

THE mithridate, theriaca, diascordium, confectio Paulina, and philonium, are the only compositions now remaining, of what have been called the *officinal capitals*. They are all medicines of great power: and as, on the one hand, they are applicable, by the judicious physician, to excellent purposes; so, on the other, their imprudent use has often been productive of mischievous consequences. It has been customary among nurses and others, to give diascordium to children, to ease their complaints, and to procure sleep; intentions which it effectually answers, but at the same time never fails to bring on a costive habit, the foundation of many diseases. This medicine has likewise been too unwarily given for restraining fluxes; whose suppression was afterwards followed by more dangerous symptoms. The cele-

brated alexipharmacs, mithridate and theriaca, have oftentimes aggravated the disorders they were intended to remedy, have converted a common cold into a high fever, have raised slight febrile complaints into a malignant fever. However strongly therefore these kinds of medicines are recommended for easing pain, warming, promoting sweat, expelling malignity, &c. the utmost caution is requisite in the use of them; the cases which demand their assistance are much less frequent than is generally supposed.

ELECTARIUM ACIDUM.

Acid electary.

Take of

Conserve of wood - sorrel, one ounce;

Pulp of tamarinds, half an ounce;

Weak spirit of vitriol, as much as is sufficient to give a grateful acidity;

Syrup of lemon juice, as much as will reduce the whole into the consistence of a soft electary.

THIS grateful acid composition is an useful refrigerant and antiseptic in different kinds of inflammatory and putrid disorders.

ELECTARIUM ALEXETERIUM.

Alexeterial electary.

Take of

Confection of kermes, one dram;

Candied ginger, six drams;

Contrayerva root,

Virginian snakeroot, each one dram;

Syrup of orange-peel, as much as is sufficient to make the other ingredients into the consistence of an electary.

THIS is a moderately warm electary, contrived by Boerhaave for raising and recruiting the strength in low fevers, where the pulse is

funk, and the patient languid and dejected. It may be taken to the quantity of a small nutmeg every four or five hours, with any proper julep.

ELECTARIUM ALTERANS.

Alterative electary.

Take of

Crude antimony, finely levigated, three drams;

Refin of guaiacum, two drams;

Oil of saffraſas, fix drops;

Conſerve of red roſes, one ounce and a half;

Balfamic ſyrup, as much as is ſufficient.

Grind the refin and the levigated antimony well together; and having mixed theſe with the oil (dropt on a little ſugar) and the conſerve, let the whole be ſoftened with the ſyrup into a due conſiſtence.

THIS medicine is uſed againſt cutaneous foulneſſes, obſtructions of the glands, and impurities of the blood and juices. Diſpenſatory writers, in general, lay the principal ſtreſs, in compositions of this kind, upon the calx, ceruſſe, or cinabar of antimony; preparations which are far inferior to the crude mineral, and very ill deſerve the great character which has been uſually given of them. The bulk of a ſmall nutmeg of this electary may be taken every morning and evening with a little of the ſimple or compound lime-water.

ELECTARIUM ANTIEPILEPTICUM.

Antiepileptic electary.

Take of

Peruvian bark, one ounce;

Wild valerian-root, two drams;

Syrup of orange-peel, a ſufficient quantity to reduce the others into an electary.

THIS medicine has been frequent-

ly preſcribed by Dr Mead, in epileptic caſes, with ſucceſs: He directs one dram to be taken every morning and evening for three months together; after which, to confirm the cure and prevent a relapſe, the ſame doſe is to be repeated for three or four days before every new and full moon for a conſiderable time.

ELECTARIUM ANTIDYSENTERICUM.

Antidysenteric electary.

Take of

Yellow wax, three drams;

Spermaceti, two drams;

Conſerve of red roſes, an ounce and a half;

Oil of almonds, half an ounce;

Balfamic ſyrup, a ſufficient quantity,

Let the wax and ſpermaceti be melted in the oil, over a gentle fire, and then mixed with the conſerve and ſyrup.

WHERE ſharp irritating humours have eroded the inteſtines, and laid open the mouths of the blood-veſſels, this ſoft healing electary is often of great uſe. It is ſaid that fluxes of long ſtanding, contracted in the Indies, which had yielded nothing to medicines of the reſtringent kind, have been removed by this, which ſupplies the natural mucus of the bowels that the flux has carried off, heals the excoriations, and obtunds the acrimonious humours.

ELECTARIUM AROMATICUM.

Aromatic electary.

Take of

The aromatic ſpecies, one dram and a half;

Conſerve of lavender, two ounces;

Syrup of orange-peel, a ſufficient quantity.

Make them into an electary.

R r

THIS

THIS warm cordial medicine is of use in nervous complaints and decays of constitution. The bulk of a small nutmeg may be taken two or three times a-day with a glass of wine, or any other proper liquor, after it.

ELECTARIUM BALSAMICUM,
Balsamic electary.

Take of

Conserve of roses, two ounces;
Locatelli's balsam, one ounce.

Dissolve the balsam in the yolk of an egg, and then mix therewith the conserve,

THIS electary is used in some coughs and disorders of the breast; as also in the vomica, or suppuration in the stomach, which sometimes happens after dysenteries, and where there is an erosion or rupture of the blood-vessels, as in hæmoptoës. In these cases, the bulk of a nutmeg may be taken for a dose twice or thrice a-day.

ELECTARIUM CHALYBEATUM.
Chalybeate electary.

Take of

1.

Salt of steel, one dram;
Candied nutmegs,
Candied ginger, each half an ounce;
Oil of cinnamon, five drops;
Conserve of orange-peel, one ounce;
Balsamic syrup, as much as is sufficient to make them into an electary.

Take of

2.

Rust of steel, or steel prepared with sulphur, six drams;
Candied ginger, one ounce;
Conserve of orange-peel, three ounces;
Syrup of orange-peel, as much as will reduce them into a proper consistence.

THESE elegant chalybeate medicines are given not only in cachectic and chlorotic cases, and menstrual obstructions; but likewise in low hysteric and melancholic disorders, and for warming and invigorating the habit in great debilities and decays of constitution. In either of these intentions, the bulk of a small nutmeg is to be taken twice a-day, and its effects promoted by moderate exercise.

ELECTARIUM DEOBSTRUENS.
Deobstruent electary.

Take of

Gum ammoniacum,
Hard soap, each a dram;
Powdered squills, one scruple;
Conserve of orange-peel, half an ounce;
Syrup of ginger, as much as is sufficient to reduce the other ingredients into the consistence of an electary.

WHERE the breast is oppressed by thick phlegm, or the viscera obstructed, this electary may be taken twice or thrice a-day to the bulk of a small nutmeg at a time. The quantity above prescribed is sufficient for six or eight doses.

ELECTARIUM AD GONORRHOEAM.
Electary for a gonorrhœa.

Take of

1.

Lenitive electary, three ounces;
Jalap, three drams;
Nitre, one dram and a half;
Simple syrup, a sufficient quantity to make them into an electary.

Take of

2.

Lenitive electary, three ounces and a half;
Balsam of Copaiva, one ounce;
Rhubarb,
Gum guaiacum,
Nitre, each one ounce;
Syrup of orange-peel, as much

as will reduce them into a proper consistence for an electary.

THESE compositions are said to be used in some of the military hospitals; the first as a cooling laxative, for the inflammation and tension of the urinary passages, which always accompany a virulent gonorrhœa; in this intention, a dram and a half is directed to be taken every morning and evening. The second is designed for strengthening the parts after the virulence is expelled, and the heat and inflammation have ceased: the bulk of a nutmeg may be taken twice or thrice a-day.

ELECTARIUM E GUMMI GUAIACO.

Electary of gum guaiacum.

Take of

Gum guaiacum,
Compound powder of arum,
Canella alba, each six drams;
Conserve of scurvy-grass, two ounces;
Syrup of orange-peel, as much as will bring them into a proper consistence.

In chronical rheumatisms, pains, and aches in general, that are not accompanied with inflammation, and some kinds of paralytic numbnesses, this warm stimulating electary may be taken to the quantity of a nutmeg twice a-day.

ELECTARIUM EX HELLEBORO NIGRO.

Electary of black hellebore.

Take of

Black hellebore root,
Extract of safin,
Compound powder of myrrh, each half an ounce;
Canella alba, two drams;
Syrup of orange-peel, as much as is sufficient.

Mix, and make them into an electary.

THIS electary is employed in one of our hospitals for promoting the natural evacuations from the uterus; for which purpose, it is undoubtedly a medicine of great power. It may be taken to the quantity of half a dram twice a-day.

ELECTARIUM INCRASSANS.

Incrassating electary.

Take of

Gum tragacanth,
Pulp of fresh comfry root, each one ounce;
Conserve of mallows, half an ounce;
Syrup of marshmallows, as much as is sufficient to reduce the whole into the consistence of an electary.

THIS electary is taken to the quantity of a chesnut, three or four times a-day, along with a milk diet, for incrassating and obtunding thin serous humours in hectic disorders, in coughs proceeding from thin tickling rheums, in fluxes and heat of urine, where the natural mucus of the parts is abraded.

ELECTARIUM AD NEPHRITICOS.

Nephritic electary.

Take of

Lenitive electary, an ounce and a half;
Venice turpentine, one ounce;
Egg-shells, prepared (or prepared oyster-shells), half an ounce;
Choice rhubarb, one dram;
Syrup of marshmallows, as much as is sufficient.

Dissolve the turpentine in the yolk of an egg, and then mix the whole together according to art, so as to make thereof an electary.

THIS composition, taken from the Edinburgh Infirmary, is contrived for cleansing the urinary passages in nephritic disorders. Tur-

R r a pentine,

pentine, properly divided by earthy powders, is a safe, and at the same time one of the most powerful diuretics that can in these cases be ventured on: the rhubarb and laxative electary are very useful additions; for the belly ought here to be always kept open, though the stronger purgatives are very improper. A dram of the electary may be taken once or twice a-day, along with an infusion of marshmallow roots, sweetened with a spoonful of honey.

ELECTARIUM PARALYTICUM.

Paralytic electary.

Take of

Mustard seed,
Conserve of rosemary tops, each
one ounce;
Compound spirit of lavender,
two drams.

Beat the mustard seed with a little water, that the pulp may be pressed through a hair sieve; then mix with it the conserve and the spirit.

THIS is a very efficacious medicine for paralytic disorders, tremors and numbness of the limbs, the decays accompanying old age, and in all cases where the solids require to be stimulated, or sluggish stagnant juices to be put in motion. It ought to be taken every morning and evening, or oftener, to the bulk of a large nutmeg; with a glass of rich wine, or any proper julep, after it.

ELECTARIUM E CORTICE PERUVIANO.

Electary of Peruvian bark.

Take of

1.

Peruvian bark, three ounces;
Cascarilla, half an ounce;
Syrup of orange-peel, a sufficient
quantity.

Take of

2.

Peruvian bark, three ounces;
Virginian snakeroot, one ounce;
Syrup of orange peel, a sufficient
quantity.

Take of

Peruvian bark, three ounces;
Crude sal ammoniac, three drams;
Syrup of lemon juice, a sufficient
quantity.

Take of

4.

Peruvian bark, three ounces;
Colcothar of vitriol, six drams;
Simple syrup, a sufficient quantity.

Take of

5.

Peruvian bark, three ounces;
Alum, one ounce;
Syrup of lemon juice, as much as
is sufficient.

Take of

6.

Extract of Peruvian bark, one
ounce;
Extract of logwood,
Extract of liquorice, each half an
ounce;
Mucilage of quince seeds, as much
as is sufficient to reduce the o-
ther ingredients into the con-
sistence of an electary.

ALL these compositions are very elegant and efficacious in the intentions for which they are designed. The first is calculated for common intermittent fevers; in the cure of which the virtues of the bark are greatly assisted by the cascarilla. The second and third are given in those intermittents which happen in cachectic habits, and persons subject to obstructions of the viscera, where the bark by itself, on account of its great astringency, would be prejudicial. The fourth is a good strengthener in laxities of the solids and decays of constitution; and the fifth, a powerful styptic in fluxes and hemorrhagies, particularly in the diabetes and fluor albus. The bulk of a nutmeg of each may be taken at a time, and repeated according to the exigency of the case. The sixth is a very agreeable form for the exhibition

hibition of Peruvian bark to those who are more than ordinarily offended with its taste; the substances here joined, effectually covering its taste, at the same time that they coincide with it in virtue. The composition is a very elegant and pleasant one, and well deserves a place in the shops: It may either be given in the form of a bolus or electary, in the dose of a dram or more; or dissolved in any suitable liquor into a draught.

ELECTARIUM PURGANS ACIDUM.

An acid purgative electary.

Take of

Pulp of tamarinds, two ounces;
Crystals of tartar, two drams.

Make them into an electary.

THIS is an useful cooling laxative in hot bilious dispositions, or inflammatory diseases. The bulk of a nutmeg may be taken every hour, or oftener, till it begins to operate, or the same quantity may be taken once a-day occasionally in dry costive habits.

ELECTARIUM SAPONACEUM.

Saponaceous electary.

Take of

Hard Spanish soap, two ounces;
Pareira brava, one ounce;
Rhubarb,
Gum of aloes, each three drams;
Syrup of orange-peel, a sufficient quantity.

Mix, and make them into an electary.

THIS electary is calculated for jaundices arising from an obstruction of the biliary ducts, or a viscosity of the bile itself; such are those which most commonly occur, in which the stools are of a whitish or ash colour, and voided with difficulty. The dose is from half a dram to a dram, twice a-day. How far the pareira brava in this composition contributes to its virtues, I

shall not take upon me to determine. Some have recommended this root as a most powerful attenuant, in a great variety of disorders; whilst others look upon it as not superior, if equal, to the common aperient roots. The sensible qualities of the pareira discover little foundation for the great character given of it; and a competency of fair trials of its virtue is as yet wanting. The London College has not received it into their Pharmacopœia,

ELECTARIUM SISTENS.

Binding electary.

Take of

The japonic confection, two ounces;
Extract of logwood, one ounce;
Syrup of dry roses, as much as will reduce them into a proper consistence for an electary.

THIS electary is calculated for the relief of dysenteries, and other intestinal fluxes, after the acrid humours have been duly evacuated by mild cathartics, &c. The quantity of a nutmeg may be taken every four or five hours.

ELECTARIUM E SULPHURE.

Electary of sulphur.

Take of

Flowers of sulphur, half an ounce;
Lenitive electary, two ounces;
Syrup of marshmallows, a sufficient quantity to make them into an electary.

THIS electary is designed against the piles, and generally distinguished in the hospitals by the title of *Electarium hemorrhoidale*. Where the disorder is accompanied with febrile or inflammatory symptoms, some nitre is occasionally added, in the proportion of two drams to the quantity here directed. It may be given from a dram to half an ounce at a time.

C H A P VI.

L O H O C H S.

A LOHOCH, *Eclegma, Linctus*, or *Lambative*, is a soft compound, designed to be licked or slowly swallowed down, of a middle consistence between a syrup and electary; at least never so thin as the former, nor so thick as the latter.

These preparations are generally composed of expressed oils, mixed with syrups, and other like substances. In making them, the syrup is first to be mixed with a little sugar, and then briskly beat up in a mortar with the oil; which will thus readily incorporate, especially if the syrup is of the acid kind. Two ounces of syrup, a dram of sugar, and an ounce of expressed oil, form a linctus of a due consistence; which may be made thicker at pleasure by adding more oil, or thinner by an increase of the syrup.

Any oily substance, as Locatelli's balsam, spermacetti, &c. may likewise be reduced into this form: and instead of sugar, powders more agreeable to the intention of emollients or pectorals may be used; as the compound powder of gum tragacanth, or the white or black bechic troches of the shops. But the form at best is very unsightly and

disagreeable, and substances of this kind render it more so. 'On these accounts this kind of preparations is entirely banished from the present Edinburgh Pharmacopœia.'

LOHOCH COMMUNE.

Common lohoch.

Edinb. +

Take of

Fresh-drawn oil of almonds,
Syrup of marshmallows, or balsamic syrup, each one ounce;
White sugar, two drams.

Mix, and make them into a lohoch.

LOHOCH ex AMYLO.

Starch lohoch.

Edinb. +

Take of

Starch, two drams;
Japan earth, one dram;
Balsamic syrup,
Whites of eggs, beaten up into a thin fluid, each one ounce.

Mix, and make them into a lohoch.

LOHOCH de LINO.

Lohoch of linseed.

Edinb. +

Take of

Fresh-drawn linseed oil,

Bal-

Balsamic syrup, each one ounce;
 Flowers of sulphur, washed,
 White sugar, each two drams.
 Mix, and make them into a lohoch.

LOHOCH de MANNA.

Lohoch of manna.

Edinb. +

Take of
 Calabrian manna,
 Fresh-drawn oil of almonds.
 Syrup of violets, each equal parts.
 Mix, and make them into a lohoch.

LOHOCH SAPONACEUM.

Saponaceous lohoch.

Edinb. +

Take of
 Castile soap, one dram;
 Oil of almonds, one ounce;
 Syrup of lemon juice, one ounce
 and a half.
 Mix, and make them into a lohoch
 according to art.

LOHOCH de SPERMACE TI.

Lohoch of spermaceti.

Edinb. +

Take of
 Spermaceti, two drams;
 Fresh-drawn oil of almonds, half
 an ounce;
 Balsamic syrup, one ounce.
 Mix the spermaceti with a sufficient
 quantity of yolk of eggs, then
 add the oil and syrup, and make
 them into a lohoch.

LOHOCH BALSAMICUM.

Balsamic lohoch.

Take of
 Spermaceti, two drams;
 Balsam of Peru, one dram;
 Syrup of marshmallows, two ounces.
 Let the spermaceti and balsam be
 well worked up with a sufficient
 quantity of yolks of eggs; and
 then mix with them the syrup.

LINCTUS SOLUTIVUS.

Solutive lohoch.

Take of
 Conserve of hips, one ounce;
 Solutive syrup of roses,
 Oil of olive, each four ounces.
 Mix, and make them into a lohoch.

THE principal use of lohochs is in disorders of the internal parts of the mouth, fauces, and œsophagus; as in aphthæ, and tickling coughs from defluxions in the first passages; for however they may have been celebrated, under the vague appellation of *pectorals*, in affections of the breast and lungs, it is not to be expected that their emollient lubricating quality can reach those parts, or that they can give any relief in the true pulmonary cough. The slow manner in which they are swallowed down renders them well adapted to correct acrimony and irritation in the throat and about the mouth of the stomach; though the free use of such unctuous compositions is soon liable to pall the appetite. Indeed the form is an inelegant one, and in the present practice is little regarded.

LINCTUS ACIDULUS.

Acidulous linctus.

Take of
 Conserve of red roses, two ounces;
 Weak spirit of vitriol, four scruples, or as much as is sufficient to give a grateful acidity.
 Mix them together.

THIS linctus is of a different nature from the foregoing preparations, and is used as a light restraining and detergent. It rather strengthens than relaxes the stomach, is sufficiently agreeable in taste, and of a fine red colour.

C H A P. VII.

E M U L S I O N S.

IN the foregoing chapter, oils were united with watery liquors, by the mediation of sugars and syrups, into thick unctuous compounds. The present chapter contains mixtures of oily, resinous, and other like bodies, with water, in a liquid form, of a white colour resembling milk, and hence called *emulsions*.

Emulsions have been generally prepared by grinding the oily seeds of plants, or kernels of fruits, along with common water, or any agreeable simple distilled water. In this process, the oil of the subject is, by the mediation of the other matter, united with the aqueous fluid: and hence they possess some share of the emollient virtue of the pure oil; with this advantage, that they are agreeable to the palate, and not apt to turn rancid or acrimonious by the heat of the body, which the pure oils in some inflammatory cases may do.

Emulsions, besides their use as medicines themselves, are excellent vehicles for certain substances which cannot otherwise be so conveniently taken in a liquid form. Thus cam-

phor, triturated with almonds, readily unites with water, into an emulsion; and in this form is conveyed into the remoted parts of the body, with sufficient efficacy to answer intentions of moment, at the same time that its heat and pungency are softened by the unctuousity of the almonds.

Pure oils, balsams, resins, and other similar substances, are likewise rendered miscible with water, into emulsions or milky liquors, by the intervention of mucilages. The white or yolk of an egg unites these bodies also with water, but less elegantly.

Several of the gummy resins, as ammoniacum, galbanum, myrrh, and others, are reducible into emulsions by trituration with water alone; their resinous part being rendered dissoluble by the mediation of the gummy.

EMULSIO COMMUNIS.

Common emulsion.

Lond.

Take of

Sweet almonds blanched, one ounce;

Gum Arabic, half an ounce;

Double.

Double-refined sugar, six drams;
Barley water, two pints.

Dissolve the gum in the barley water warmed; as soon as the water is grown thoroughly cold, pour it by little at a time upon the almonds and sugar, first beat together, continuing to grind the whole, that the liquor may grow milky; after which, it is to be passed through a strainer.

Edinb.

Take of

Sweet almonds, one ounce;

Bitter almonds, one dram;

Common water, two pounds and a half.

Beat the blanched almonds in a marble mortar, and gradually pour on them the common water, working the whole well together; then strain off the liquor.

EMULSIO ARABICA.

Arabic emulsion.

Edinb.

This is made in the same manner as the preceding; only adding, whilst beating the almonds,

Of mucilage of gum Arabic, two ounces.

GREAT care should be taken, that the almonds are not become rancid by keeping; which will not only render the emulsion extremely unpleasant, a circumstance of great consequence in a medicine that requires to be taken in large quantities, but likewise give it injurious qualities little expected from preparations of this class. The addition of the bitter almonds now ordered in preparing these emulsions, may perhaps preserve them in some degree from suffering the above changes. These liquors are principally made use of for diluting and obtunding acrimonious humours; particularly in heat of urine and

stranguries arising either from a natural sharpness of the juices, or the operation of cantharides, or other irritating medicines: in these cases, they are to be drank frequently, in the quantity of half a pint or more at a time.

Some have ordered emulsions to be boiled, with a view to deprive them of some imaginary crudity; but by this process they quickly cease to be emulsions, the oil separating from the water, and floating distinct upon the surface. Acids and vinous spirits produce a like decomposition. On standing also for some days, without addition, the oily matter separates and rises to the top, not in its pure form, but in that of a thick cream. These experiments prove the composition of the emulsions made from the oily seeds of kernels, and at the same time point out some cautions to be attended to in their preparation and use.

EMULSIO CAMPHORATA.

Camphorated emulsion.

Edinb. +

Take of

Camphor, half a dram;

Sweet almonds, six in number;

White sugar, half an ounce;

Simple pennyroyal water, half a pint.

Grind the camphor and almonds well together in a stone mortar, and add by degrees the pennyroyal water; then strain the liquor, and dissolve in it the sugar.

THIS is a very commodious form for the exhibition of camphor; the unctuous quality of the almonds in great measure covering its pungency. In fevers that require the assistance of this powerful diaphoretic drug, a spoonful of the emulsion may be taken every three or four hours.

LAC

LAC AMMONIACI.

Milk of ammoniacum.
 Lond.

Take of

Gum ammoniacum, two drams;
Simple pennyroyal water, half a pint.

Grind the ammoniacum with the water, in a mortar, until the gum is dissolved.

THIS liquor is employed for attenuating tough phlegm, and promoting expectoration, in humoural asthmas, coughs, and obstructions of the viscera. It may be given to the quantity of two spoonfuls twice a-day.

EMULSIO PURGANS.

A purging emulsion.

Take of

Sweet almonds, blanched, two drams;
Fine sugar, one dram;
Gum Arabic, half a dram;
Scammony, ten grains;
Simple cinnamon water, one ounce.

Dissolve the gum in the cinnamon water; and having ground the scammony with almonds and sugar, pour on the liquor by little at a time, continuing to grind them together, so as to make them into an emulsion.

THIS emulsion is an agreeable and an effectual purgative. It may be prepared with different proportions of the scammony, at pleasure: other purgative resins, as that of jalap, may be substituted to the scammony; a proper quantity of any syrup to the sugar; and to the cinnamon water, any other simple water that may be more acceptable: but spirituous waters, for reasons already mentioned, have no place. Some have employed an infusion of liquorice, which appears to be a very

proper addition in these kinds of preparations, as it coincides with the almonds in correcting the irritating power of the purgative material.

EMULSIO OLEOSA.

Oily emulsion.

Take of

Oil olive, a quarter of a pint;
Spirit of hartshorn, two drams;
Simple pennyroyal water, twelve ounces;
Pectoral syrup, an ounce and a half.

Mix them together.

THIS composition is often used against recent colds, for alleviating the cough, and promoting expectoration. Where the complaints are of long standing, these kinds of medicines have no place; nor is their use in any case to be long continued, as they relax the stomach, pall the appetite, and increase the disorder.

‘The union of the oil with the water is more perfect when the caustic spirit of sal ammoniac is employed; but whichever is used, there is frequently a quantity of acid in the stomach sufficient to neutralize the alkali, whereby the oil is separated in its entire state, only to be overcome by the Herculean stomach of a London alderman.’

A much more elegant oily emulsion, for all the intentions in which the simple lubricating quality of expressed oils is wanted, may be prepared in the following manner:

Take an ounce of powdered gum Arabic, and the same quantity of common water: dissolve the gum in the water, that it may form a thick mucilage; to which add by degrees four ounces of fresh-drawn oil of almonds, rubbing them well together in a mortar till they incorporate into a smooth white

white mass. Then pour in by little and little, continuing the agitation, four ounces of common water; to which may be added nutmeg-water, rose-water, and simple syrup, of each two ounces.

THIS appears to be the best form that oils can be given in; 'but is notwithstanding liable to the same objections as the preceding.' The union is also more perfect, and the oil less disposed to separate on standing, than in the emulsions obtained by other means. Even strong acids added to the emulsion, produce no decomposition in it. But alkalis can have no place in this form; for these, as we have observed upon another occasion, precipitate pure gums themselves from water:

EMULSIO SPERMATIS CETI.

Emulsion of spermaceti.

Take equal parts of spermaceti and of mucilage of gum Arabic. Rub them together in a mortar till they are incorporated into a thick mass, which may be diluted at pleasure with water, as in the foregoing process.

EMULSIONS of spermaceti, or spermaceti draughts, are commonly prepared by means of yolks of eggs; and the emulsions, so prepared, are sufficiently uniform. Those made with mucilage, as here directed, have this advantage, that they are less disagreeable in taste, and not liable to grow rancid. The mixture

of the spermaceti and mucilage may be kept, for many days, in a state fit for being diluted, by gradual additions of water, into a smooth emulsion.

EMULSIO CUM ARO.

Emulsion with arum root.

Take of

Fresh arum root,
Gum Arabic, each two drams;
Spermaceti, two scruples;
Common water, five ounces;
Nutmeg-water,
Syrup of orange-peel, each half an ounce.

Dissolve the gum Arabic, with a part of the water, into a mucilage, which is to be beaten with the spermaceti into a smooth paste. To this add the arum root, previously beaten by itself into a pulp; and rub them well together, that they may be thoroughly mixed; then gradually pour in the waters and the syrup.

FRESH arum root may be taken in this form without the least inconvenience from the pungency, with which the root itself so violently affects the mouth. I have given a spoonful of the emulsion every six hours, or oftener, in cases of the rheumatic kind, and generally with great benefit. The more immediate effect experienced from it was that of warming the stomach, and promoting sweat, which in some instances it did profusely.

C H A P. VIII.

JULEPS, MIXTURES, and DRAUGHTS.

BY *Julep* is commonly understood, an agreeable liquor, designed as a vehicle for medicines of greater efficacy, or to be drank after them, or to be taken occasionally as an auxiliary. In this light their basis is generally common water, or a simple distilled water, with one-fourth or one-third its quantity of a distilled spirituous water: this mixture is sweetened with sugar or any proper syrup, or acidulated with vegetable or mineral acids, or impregnated with other medicines suitable to the intention; care being taken that these additions be such, as will not render the compound unsightly or unpalatable. The quantity usually directed at a time, in common prescription, is six or eight ounces, to be taken by spoonfuls.

A *Mixture*, more strictly so called, receives more efficacious materials, whether soluble in water, as extracts or salts, or indissoluble, as powders; more regard being here had to the medicinal intention than to the sightliness or palatableness of the compound. There is indeed no precise distinction between the two; the same composition being often called by one a julep, and by another a mixture; though in general,

few would give the name of julep to a very disagreeable liquor, or that of mixture to a very pleasant one.

A *Draught* differs from a julep or mixture, only in being prescribed in less quantity, the whole being intended for one dose.

JULEPUM e CAMPHORA.

Julep of camphor.

Lond.

Take of

Camphor, one dram;

Double-refined sugar, half an ounce;

Boiling water, one pint.

Grind the camphor first with a little rectified spirit of wine until it grows soft; and afterwards with the sugar till they are perfectly mixed: then add the water by little and little, let the mixture cool in a close vessel, and lastly, pass it through a strainer.

THIS is a more easy and effectual way of mingling camphor with aqueous liquors than grinding it with water alone, or setting it on fire, and then quenching it in water, as directed in our former dispensatory, and in other books of pharmacy: though even this method is liable to some

some inconveniences; part of the camphor exhaling, unless an extraordinary deal of care is taken, upon the affusion of the boiling water; and part remaining upon the strainer. The julep tastes strong of the camphor, and may be given, in cases where this drug is proper, in the dose of a spoonful or two. In extemporaneous prescription, vinegar is sometimes employed instead of water; this acid not only rendering the julep more grateful to the palate and stomach, but likewise promoting and extending the efficacy of the camphor, rendering it serviceable in some fevers where that hot pungent medicine by itself would be less proper. In this view the following form is a very elegant one.

JULEPUM B CAMPHORA ACETOSUM.

Camphor julep with vinegar.

Take of

Camphor, one dram;
Gum Arabic, two drams;
Double-refined sugar, half an ounce;
Vinegar, one pint.

Grind the camphor with a few drops of rectified spirit of wine till it grows soft; then add the gum previously reduced to a mucilage with equal its quantity of water, and rub them together till they are perfectly mixed. To this mixture add by degrees the vinegar with the sugar dissolved in it.

By this management, the whole substance of the camphor is united with, and kept suspended in, the liquor; and consequently every spoonful of the mixture is equivalent to one grain and seven-eighths of a grain of camphor in substance. The same treatment succeeds equally when water is used for the menstruum; and if the assistance of nitre is

required, this also may be added in either form.

JULEPUM e CRETA.

Chalk julep.

Lond.

Take of

The whitest chalk, prepared, one ounce;
Double-refined sugar, six drams;
Gum Arabic, two drams;
Water, two pints.

Mix them together.

THIS julep is designed for heart-burns and other like disorders arising from acid juices in the first passages. The chief use of the gum is to give a greater degree of consistence to the water, and enable it to keep the powdered chalk suspended. See POTIO CRETACEA.

JULEPUM e MOSCHO.

Musk julep.

Lond.

Take of

Damask-rose water, six ounces by measure
Musk, twelve grains;
Double-refined sugar, one dram.
Grind the sugar and the musk together, and gradually add to them the rose-water.

THIS is an improvement upon the HYSTERIC JULEP WITH MUSK of Bates. Orange-flower water is directed by that author; and indeed this more perfectly coincides with the musk than rose-water: but as the former is difficultly procurable in perfection, the latter is here preferred. The julep appears turbid at first; on standing a little time, it deposits a brown powder, and becomes clear, but at the same time loses great part of its virtue. This inconvenience may be prevented, by thoroughly grinding the musk with

two

two or three drams of mucilage of gum Arabic, before the addition of the water, as directed in the preceding chapter for making emulsions: by means of the gum, the whole substance of the musk is made to remain suspended in the water. Volatile spirits are in many cases an useful addition to musk, and likewise enable water to keep somewhat more of the musk dissolved than it would otherwise retain. The following composition of this kind is used in some of our hospitals.

JULEPUM MOSCHATUM.

Musk julep.

Take of

Rose-water, six ounces;
Volatile oily spirit, one dram and a half

Musk, fifteen grains;
White sugar, half an ounce;

Grind the musk with the sugar, and then mix therewith the other ingredients.

JULEPUM ALEXIPHARMACUM.

Alexipharmac julep.

Take of 1.

Simple alexeterial water, six ounces;

Spirituos alexeterial water, two ounces;

Syrup of clove-julyflowers, two drams.

Mix them together.

Take of 2.

Simple alexeterial water, six ounces;

Spirituos alexeterial water with vinegar, two ounces;

Syrup of lemon juice, two drams.

Mix them together.

JULEPUM CARDIACUM.

Cordial julep.

Take of

Simple cinnamon water,

Simple orange-peel water, each three ounces;

Nutmeg water, two ounces;

Syrup of orange-peel, half an ounce.

Mix them together.

Take of 2.

Dill-seed water, six ounces;

Cardamom - seed water, two ounces;

Compound spirit of lavender,

Syrup of saffron, each two drams.

Mix them together.

JULEPUM CARMINATIVUM.

Carminative julep.

Take of 1.

Fennel-seed water, six ounces;

Compound juniper water, two ounces;

Syrup of clove-julyflowers, half an ounce.

Take of 2.

Jamaica-pepper water, six ounces;

Compound aniseed water, two ounces;

Syrup of orange-peel, half an ounce.

Take of 3.

Dill-seed water, six ounces;

Compound caraway water, two ounces;

Syrup of ginger, half an ounce.

JULEPUM HYSTERICUM.

Hysteric julep.

Take of 1.

Simple pennyroyal water,

Castor water, each three ounces;

Spirituos pennyroyal water, two ounces;

Simple syrup, two drams.

Take of 2.

Simple alexeterial water, six ounces;

Car-

Cardamom - seed water, two ounces;
Compound spirit of lavender,
Volatile aromatic spirit, each one dram;
Syrup of clove-julyflowers, half an ounce.

Take of 3.
Dill-seed water, four ounces;
Simple peppermint water, two ounces;
Tincture of cardamoms,
Syrup of ginger, each two drams.

JULEPUM REFRIGERANS.
A cooling julep.

Take of
Rhenish wine, five ounces;
Damask-rose water, two ounces;
Seville orange juice,
Syrup of violets, each six drams.

JULEPUM STOMACHICUM.
Stomachic julep.

Take of 1.
Simple mint water, six ounces;
Spirituos mint water, two ounces;
Syrup of saffron, two drams.

Take of 2.
Tincture of mint, six ounces;
Cardamom water, two ounces;
Simple syrup, half an ounce.

Take of 3.
Cinnamon water, six ounces;
Nutmeg water,
Stomachic tincture, each one ounce;
Syrup of orange-peel, half an ounce.

THE titles of these mixtures express the intentions for which they are calculated: four or five spoonfuls of either may be taken occasionally, or used as vehicles and diluters of medicines of greater efficacy.

The following *julapia* were formerly used in the Edinburgh infirmary.

JULAPIUM AMMONIACUM.
Ammoniacum julep.

Take of
Milk of ammoniacum, four ounces;
Syrup of squills, three ounces.
Mix them together.

Two spoonfuls of this mixture may be given twice a-day, in coughs, asthmas, and oppressions at the breast. It is a medicine of considerable efficacy, but not a little unpleasant, though called a julep in the hospitals where it is used.

JULAPIUM ANTIHYSTERICUM.
Antihysterical julep.

Take of
Pennyroyal water, four ounces;
Compound valerian water, two ounces;
Tincture of castor, two drams;
Salt of hartshorn, ten grains;
White sugar, six drams.
Mix them together.

THE virtues of this composition are sufficiently obvious from its title: the dose is two spoonfuls, to be taken twice or thrice a-day.

JULAPIUM CARDIACUM.
Cordial julep.

Take of
Alexeterial water, four ounces;
Aromatic water, two ounces;
Volatile oily spirit,
Tincture of saffron, each two drams;
White sugar, half an ounce.
Mix, and make them into a julep.

THIS mixture is an useful cordial in all depressions of the spirits, in the sinkings of low fevers, and the languors to which hysterical and hypochondriacal

pochondriacal persons are subject. An ounce, or two spoonfuls, may be taken for a dose, two or three times a-day.

JULAPIUM DIAPHORETICUM.

Diaphoretic julep.

Take of

Alexeterial water, four ounces;
Spirit of Mindererus, two ounces;

Salt of hartshorn, ten grains;

White sugar, six drams.

Mix them for a julep.

THIS excellent composition is a very powerful sudorific, and answers its intention more effectually, and with greater certainty, than many others calculated for the same purpose. Where a copious sweat is to be excited, as in rheumatic diseases, two spoonfuls are to be taken warm in bed every hour, or two hours, till the sweat breaks out; if warm diluting liquors are not afterwards sufficient to keep it up, the same medicine is to be occasionally repeated.

JULAPIUM DIAPHORETICUM

ACIDUM.

Acid diaphoretic julep.

Take of

Alexeterial water, four ounces;

Treacle vinegar, two ounces;

Tincture of saffron, half an ounce;

Spirit of amber, one dram;

White sugar, one ounce.

Mix them together.

THE acid quality of this diaphoretic julep adapts it more particularly to those disorders in which any of the internal parts are inflamed, as in pleurifies and peripneumonies. It is given in the same dose as the preceding.

JULAPIUM DIURETICUM.

Diuretic julep.

Take of

Spirit of Mindererus, four ounces;
Compound horseradish water, two ounces;

Syrup of marshmallows, three ounces.

Mix them together.

THE spirit of Mindererus is an excellent aperient saline liquor, capable of promoting evacuation either by the cutaneous pores, or the urinary passages, according to the manner of exhibiting it. We have seen above, that when taken warm in bed, it proves a powerful sudorific; especially if assisted by volatile salts, small doses of opiates, or other substances which tend to determine its action to the skin. If the patient walks about, in a cool air, it operates gently, but for the most part effectually, by urine: the additions here joined to it correspond with this intention, and promote its operation. As this medicine excites the urinary discharge, without heating or irritating the parts, it takes place not only in dropsies, but likewise in inflammatory disorders, wherever this salutary secretion is to be promoted. It is given to the quantity of two spoonfuls, thrice a-day.

A dram of spirit of amber is sometimes mixed with this julep, which nevertheless does not seem to receive from that ingredient any additional virtue: whatever virtues the salt of amber may possess (which probably are not so great as is generally supposed) the spirit is impregnated therewith in an extremely low degree.

JULAPIUM FOETIDUM.

Fetid julep.

Take of

Asafetida, one dram and a half;
Rue

Rue water, six ounces;
Compound valerian water, two
ounces;
Oil of hartshorn, twenty drops;
White sugar, ten drams.

Rub the asafetida in the rue water
till it dissolves; and having dropt
the oil upon the sugar, mix the
whole together.

THIS composition is not a little
fetid and unsightly; it is neverthe-
less a medicine of great efficacy in
hypochondriacal and hysterical disor-
ders, asthma, and other nervous
complaints: the dose is one spoon-
ful, to be taken thrice a-day. It is
sometimes prepared without the oil
of hartshorn.

JULAPIUM HYDRAGOGUM.
Hydragogue julep.

Take of

Chamomile - flower water, six
ounces;
Emetic tartar, ten grains;
Syrup of buckthorn, two ounces.
Mix them together.

Two spoonfuls of this julep are
given, in hydropic cases, every two
hours, till it takes sufficient effect as
a purgative; which it generally does
before the quantity here prescribed
has been made use of. Emetic tar-
tar, thus exhibited in small doses,
and frequently repeated, proves as
certain and powerful a cathartic as
it does an emetic when given in a
larger quantity at once. It operates
nevertheless, for the most part, with
sufficient ease.

JULAPIUM SISTENS.
Binding julep.

Take of

Alexeterial water, four ounces;
Aromatic water, two ounces;
Japonic confection, two drams;
Japan earth, in powder, one
dram;

2

Liquid laudanum, forty drops;
White sugar, half an ounce.
Mix them well together.

THIS julep is calculated against
dysenteries and diarrhoeas; in which,
after proper evacuations, it general-
ly eases the gripes and restrains the
flux. It is to be given three or four
times a-day, in the quantity of a
spoonful at a time.

MISTURA ALEXETERIA.
Alexeterial mixture.

Take of

Common water, four ounces;
Spirituous alexeterial water with
vinegar,
Julep of camphor, each one ounce
and a half;
Compound powder of contrayer-
va, four scruples;
Nitre, two scruples;
Syrup of orange-peel, six drams.
Mix them together.

IN hospitals, and places ill-aired,
common inflammatory fevers some-
times change into putrid and malig-
nant ones. To guard against any
accident of this kind, as soon as the
inflammation begins to abate, or the
pulse to soften, three or four spoon-
fuls of this alexipharmac mixture
may be given every six hours. Cam-
phor seems to answer best when thus
given in a liquid form; and to be
most efficacious in such small doses,
for abating inflammation and ner-
vous symptoms, and likewise for
promoting a gentle diaphoresis.

MISTURA ANTIDYSENTERICA.
Antidysenteric mixture.

Take of

1.
Simple cinnamon water, seven
ounces;
Spirituous cinnamon water, one
ounce;
Electary of scordium with opium,
half an ounce.

S f

Mix

Mix them together.

Take of 2.

Extract of logwood, three drams;

Tincture of Japan earth, two drams;

Spirituos cinnamon water, one ounce;

Common water, seven ounces.

Dissolve the extract in the cinnamon water, and then add the common water and the tincture.

IN recent dysenteries, after the necessary evacuations, a spoonful or two of either of these mixtures may be given after every motion, or once in four or five hours; if the first, which is a mild opiate, fails of procuring rest, it is a sign that some of the corrupted humours still remain in the bowels, and that it is more proper to go on with the evacuation than to suppress the flux. These medicines will sometimes likewise take place in the last stage of the disease, when through neglect or mismanagement it has continued till the strength is much impaired, the intestines greatly relaxed, and their villous coat abraded; provided there are neither ichorous or involuntary stools, aphthæ, petechiæ, hiccup, or great anxiety at the breast. Rhu-barb, and these astringents, are to be so interposed, that at the same time that the putrid humours are dislodged, the strength may be supported, and the intestines braced. See Dr Pringle's excellent Observations on the Diseases of the Army, page 254, & seq. where the reader will find a full and satisfactory history of the symptoms and cure of this distemper, so frequent and fatal in the camp.

MISTURA ANTIEMETICA SALINA.

Saline antiemetic mixture.

Take of

Salt of wormwood, half a dram;

Lemon juice, six drams;

Simple cinnamon water, one ounce;

Fine sugar, one scruple.

Mix them together.

THIS mixture is frequently prescribed, not only for the purpose expressed in its title, but likewise as a saline aperient in icterical, inflammatory, and other disorders, where medicines of that class are proper. For stopping vomiting, it is most effectual when given in the state of effervescence. See FIXED AIR.

MISTURA CARDIACA.

Cordial mixture.

Take of

Simple cinnamon water, four ounces;

Spirituos cinnamon water, two ounces;

Extract of saffron, one scruple;

Confection of kermes, six drams.

Mix them together.

IN great languors and depressions, a spoonful of this rich cordial mixture may be taken every half hour.

MISTURA AD PHTHISIN.

Mixture against the phthisis.

Take of 1.

Balsam of Copaiba, one dram;

Common water, four ounces;

Spirituos cinnamon water, one ounce;

Syrup of orange-peel, half an ounce.

Let the balsam be dissolved in a proper quantity of yolk of egg, and then mixed with the other ingredients.

Take of 2.

Thebaic extract, one grain;

Conserve of roses, half a dram.

Mix them together for a bolus.

Take

Take of 3.
 Oxymel of squills, a dram and a half;
 Thebaic tincture, fifteen drops;
 Spirituous cinnamon water, two drams;
 Common water, two ounces.
 Mix them together.

In the advanced state of a consumption, we may distinguish two sorts of coughs; one occasioned by the ulcers, and the other by a thin rheum falling upon the fauces and trachea; which parts being then deprived of their mucus, become extremely sensible to irritation. It is the last kind, perhaps, which is most painful and teasing to the patient. The first sort requires balsamics, if the ulcer is open, and the matter can be expectorated. For this purpose, the first of the above mixtures is a very elegant and effectual formula: two spoonfuls are to be taken at a time, twice a-day: if the balsam purges, two drams of the paretoric elixir, added to the quantity of the mixture here prescribed, will prevent that effect. The other kind of cough can only be palliated by incrassants; and for that purpose, the second of the above compositions is one of the most successful medicines: the conserve is altogether safe, and otherwise well adapted to the nature of the disease, but of weak virtues: the opiate extract is the most efficacious ingredient, but is to be given with great caution, as opiates in general are apt to heat, to bind the body, and to obstruct expectoration. As these bad qualities are in good measure corrected by squills; as soon as the patient begins to complain of restless nights from coughing, the third mixture may be given at bed-time. See Pringle's Observations on the Diseases of the Army.

Notwithstanding these ideal di-

stinctions, and the practice founded on them, it must be acknowledged, that there is very much ambiguity on the use of the medicines called *Balsamics*. They are generally stimulating substances, fitted to inflame ulcers, and aggravate the hectic symptoms. Their antiseptic powers are too trifling to overbalance these disadvantages; but to say with some, that these stimulating substances may cure phthisis by producing an adhesion of the ulcers to the pleura, is a piece of reasoning too sportive to be gravely applied in the treatment of a disease so fatal to the most amiable part of society.

MISTURA E VALERIANA.

Valerian mixture.

Take of
 Simple peppermint water, twelve ounces;
 Wild valerian root in powder, one ounce;
 Compound spirit of lavender, half an ounce;
 Syrup of orange-peel, one ounce.
 Mix them together.

WILD valerian root, one of the principal medicines in epilepsies and vertigoes, seems to answer better when thus exhibited in substance, than if given in form of tincture or infusion. The liquors here joined to it excellently coincide with, and by their warmth and pungency greatly improve its virtues. Two spoonfuls of the mixture may be taken twice or thrice a-day.

HAUSTUS CATHARTICUS.

Cathartic draught.

Take of 1.
 Scammony, ten grains;
 Spirit of rosemary, two drams;
 Syrup of buckthorn, six drams.
 Grind the scammony with the spirit in a glass mortar; and when
 S f 2 per-

perfectly incorporated, mix in the
syrup.

Mix them together.

Take of 2.

Jalap in powder, one scruple;
Ipecacuanha, three grains;
Compound juniper water, one
ounce;
Infusion of linseed, an ounce and
half;
Simple syrup, one dram.
Mix them together.

BOTH these compositions are
strong cathartics, yet for the most
part easy and safe in operation.
They are calculated chiefly for hy-
dropic cases, in which they procure
copious evacuations, without weak-
ening or fatiguing the patient so
much as many other medicines of
this kind.

HAUSTUS CATHARTICUS SALINUS.

Saline cathartic draught.

Take of

Glauber's cathartic salt,
Manna, each six drams;
Boiling water, three ounces;
Tincture of cardamoms, one
dram.

Dissolve the salt and manna in the
water; and having strained off the
liquor, add to it the tincture of
cardamoms.

THIS is a very elegant and agree-
able saline purgative. Tincture of
cardamoms is one of the best addi-
tions to liquors of this kind, or to
the purging mineral waters, for ren-
dering them acceptable to the sto-
mach.

HAUSTUS DIAPHORETICUS.

Diaphoretic draught.

Take of

Spirit of Mindererus,
Syrup of meconium, each half an
ounce;
Salt of hartshorn, five grains.

THIS draught is a very powerful
saline diaphoretic. It is given with
safety, and often with great benefit,
in the beginning of inflammatory
fevers, after bleeding; where the-
riaca, and other warm substances
usually employed, if they fail in
bringing out a sweat, increase the
fever.

HAUSTUS DIURETICUS.

Diuretic draughts.

Take of 1.

Oxymel of squills, one dram and
a half;
Simple cinnamon water, one
ounce;
Compound spirit of lavender,
Syrup of orange-peel, each one
dram.

Mix them together.

Take of 2.

Vinegar of squills, one dram (or
one dram and a half;
Salt of wormwood, half a dram;
Lemon juice, six drams;
Simple cinnamon water, an ounce
and a half;
Spirituos peppermint water, half
an ounce;
Syrup of orange-peel, one dram.
Let the salt of wormwood and lemon
juice be first mixed together, and
then add to them the other in-
gredients.

Take of 3.

Diuretic salt, two scruples;
Oxymel of squills, one dram by
measure;
Water, an ounce and a half.

Mix them together.

Take of 4.

Tincture of cantharides, fifteen
drops;
Salt of wormwood, half a dram;
Lemon juice, six drams;

Simple

Simple pennyroyal water, an ounce and a half;
Simple syrup, two drams.
Mix them together.

THE two first of these elegant and efficacious compositions are commended by Dr Mead for promoting urine in hydropic cases. He directs them to be taken every night or oftener, according to the urgency of the symptoms. The squill, one of the most powerful diuretics, is, by the additions here joined to it, rendered not only more grateful to the palate and stomach, but likewise enabled more effectually to answer the purposes intended by it. The other two are taken from our hospitals; in which the former, composed on the same plan with the two preceding, is justly distinguished by the title of *mitior*, or milder; and the latter, containing besides the saline matter a moderate dose of cantharides, by that of *fortior*, or stronger.

HAUSTUS ANODYNO-DIURETICUS.

An anodyne diuretic draught.

Take of

Ley of tartar, half a dram;
Thebaic tincture, forty drops;
Peppermint water, one ounce;
Simple cinnamon water, half an ounce;

Spirituos cinnamon water, two drams;
Syrup of marshmallows, one dram.
Mix them together.

THOUGH practitioners have rarely ventured to exhibit opium in dropsies; yet in those which are accompanied with great pain, this anodyne drug, by easing the pain, and removing the stricture of the passages, which painful sensations always occasion, proves a medicine of great service, and notably promotes the urinary discharge. Dr Mead has given a remarkable instance of the good effects of the mixture above prescribed, in a person labouring under an ascites and tympany at the same time, where the pain was intolerable, the thirst intense, and the urine in very small quantity: the stronger purgatives increased the distemper; soap, alkaline salts, nitre, and other diuretics, were tried in vain: this draught (when the patient seemed to be beyond any assistance from medicine) procured unexpected relief, not only a gentle sleep, and truce from the pain, but likewise a copious discharge of urine; by repeating the medicine, for a little time, every eight hours, and afterwards using corroborants, the cure was perfectly completed.

C H A P. IX.

LOTIONS, GARGARISMS, INJECTIONS, &c.

AQUA ALUMINOSA
BATEANA.*Bates's alum water.*
Lond.

TAKE of

Alum,
White vitriol, each half an ounce;
Water, two pints.

Boil the salts in the water till they are dissolved; let the solution settle, and afterwards filtre it through paper.

BATES directs the salts to be first powdered and melted over the fire; but this is needless trouble, since the melting only evaporates the aqueous parts, which are restored again on the addition of the water. This liquor is used for cleansing and healing ulcers and wounds; and for removing cutaneous eruptions, the part being bathed with it hot three or four times a-day. It is sometimes likewise employed as a collyrium; and as an injection in the gonorrhœa and fluor albus, when not accompanied with virulence.

2

AQUA ALUMINOSA.

Alum water.
Edinb. +

Take of

Corrosive mercury sublimata,
Alum, each two drams;
Water, two pints.

Let the sublimata and alum be ground into powder, and boiled with the water, in a glass vessel, to the consumption of half the water; then suffer the liquor to settle, and pour it off clear from the sediment.

THIS is taken from Fallopius, with the exchange of rose and plantane waters for common water, which is equally fit for the purpose. The composition is designed chiefly for cutaneous pustules and ulcerations.

AQUA SAPPHIRINA.

Sapphire-coloured water.
Lond.

Take of

Lime-water, newly made, one pint;
Sal

Sal ammoniac, one dram;
Let them stand together, in a copper vessel, or along with some plates of copper, until the liquor has acquired a sapphire colour.

Edinb.

Take of
Lime water, newly made, eight ounces;
Sal ammoniac, two scruples;
Verdigris, beat, four grains.
Mix them, and after twenty-four hours strain the liquor.

‘THIS is a much more cheap and convenient method than the preceding.’

This water is at present pretty much in use as a detergent of foul and obstinate ulcers, and for taking away specks or films in the eyes. The copper contributes more to its colour than to its medicinal efficacy; for the quantity of the metal dissolved is extremely minute.

AQUA VITRIOLICA CÆRULEA.

Blue vitriolic water.
Lond.

Take of
Blue vitriol, three ounces;
Alum,
Strong spirit (or oil) of vitriol, each two ounces;
Water, a pint and a half.
Boil the salts in the water until they are dissolved; then add the acid spirit, and filtre the mixture through paper.

AQUA STYPTICA.

Styptic water.
Edinb.

Take of
Blue vitriol,
Alum, each three ounces;
Water, two pounds.
Boil them until the salts are dissolved; then filtre the liquor, and

add an ounce and a half of vitriolic acid.’

THESE compositions are formed upon the styptic, recommended by Sydenham, for stopping bleeding at the nose, and other external hæmorrhagies: for this purpose cloths or doffils are to be dipt in the liquor, and applied to the part.

AQUA VITRIOLICA CAMPHORATA.

Camphorated vitriolic water.
Lond.

Take of
White vitriol, half an ounce;
Camphor, two drams;
Boiling water, two pints.
Mix them, that the vitriol may be dissolved; and after the feces have subsided, filtre the liquor through paper.

THIS is an unfrugal method of managing camphor, the greatest part of which separates with the feces of the vitriol, very little of it remaining suspended in the water. The Edinburgh College, in the preceding edition of their Pharmacopœia, had a preparation under the title of AQUA OPHTHALMICA, differing little otherwise from the above than in the quantity of water being greater, and in an addition of tutty and bole; ingredients which could be of no use, as not being soluble in water, and subsiding from it in standing.

AQUA VITRIOLICA.

Vitriolic water.
Edinb. +

Take of
White vitriol, two drams;
Water, two pints.
Boil till the vitriol is dissolved, and then filtre the liquor.

WHERE the eyes are watery or inflamed, these solutions of white vitriol

triol are very useful applications: the slighter inflammations will frequently yield to this medicine, without any other assistance: in the more violent ones, venæsection and cathartics are to be premised to its use.

AQUA PHAGEDÆNICA.

Phagedenic Water.

Edinb.

Take of

Lime-water, one pint;

Corrosive mercury sublimate, half a dram.

Let a solution be made.

THIS is designed for washing and cleansing old foul ulcers, and preventing the growth of fungous flesh. It is for most purposes rather too acrid to be used without dilution.

GARGARISMA ASTRINGENS.

Astringent gargarism.

Take of

Oak bark, one ounce;

Alum, one dram;

Honey of roses, one ounce;

Water, a pint and a half.

Boil the water with the oak bark, till such time as the liquor, when strained, will amount only to one pint; to which add the alum and the honey.

GARGARISMA COMMUNE.

Common gargarism.

Take of

Tincture of roses, one pint;

Honey of roses, two ounces.

Mix them together.

Or,

Take of

Water, six ounces;

Nitre, one dram;

Honey of roses, one ounce.

Mix them together. Where acids are requisite, forty drops of the weak spirit of vitriol are added to this composition.

GARGARISMA DETERGENS.

Detergent gargarism.

Take of

Emollient decoction, one pint;

Tincture of myrrh, one ounce;

Honey, an ounce and a half.

Mix them together.

GARGARISMA EMOLLIENS.

Emollient gargarism.

Take of

Marshmallow root, two ounces;

Figs, four in number;

Water, three pints.

Boil them till one pint is wasted, and then strain the liquor.

THESE liquors are used for washing the mouth and fauces; the first, where the parts are extremely relaxed; the second and third, where ulcerations require to be deterged, or the excretion of thick viscid saliva promoted; and the fourth, where the mouth is dry, parched, and rigid, to moisten and soften it. In some cases, volatile spirits may be advantageously joined to these kinds of preparations. Dr Pringle informs us, that in the inflammatory quinsy, or strangulation of the fauces, he has observed little benefit arising from the common gargles; that such as were of an acid nature seemed to do more harm than good, by contracting the emunctories of the saliva and mucus, and thickening those humours; that the decoction of figs in milk and water seemed to have a contrary effect, especially if some spirit of sal ammoniac was added, by which the saliva was made thinner, and the glands brought to secrete more freely; a circumstance always conducive to the cure.

ENEMA DE AMYLO.

Starch glyster.

Take of

Gelly of starch, four ounces;

Lin.

Linseed oil, half an ounce.

Liquefy the gelly over a gentle fire, and then mix in the oil. Forty drops of liquid laudanum are sometimes added.

ENEMA ANODYNUM, five OPIATUM.
Anodyne, or opiate glyster.

Take of
Infusion of linseed, six ounces;
Liquid laudanum, forty drops.
Or,
Mutton broth, five ounces;
Thebaic extract, three grains.

ENEMA ANTICOLICUM.
Glyster against the colic.

Take of
Common decoction, half a pint;
Tinctura sacra, one ounce;
Common salt, one dram;
Linseed oil, two ounces.
Mix them together.

ENEMA ASTRINGENS.
Astringent glyster.

Take of
Lime-water, ten ounces;
Japonic confection, half an ounce.
Mix them together for a glyster, of which one half is to be injected at a time.

ENEMA ASTRINGENS
BALSAMICUM.

Astringent balsamic glyster.

This is made by adding to the foregoing half an ounce of Locatelli's balsam, dissolved in the yolk of an egg.

ENEMA COMMUNE.
Common glyster.

Take of
Common decoction, twelve ounces;
Lenitive electary, one ounce;
Common salt, half an ounce;
Oil olive, two ounces.
Mix them together.

ENEMA DOMESTICUM.
Domestic glyster.

Take of
Cows milk, half a pint;
Brown sugar,
Oil olive, each one ounce.
Mix them together.

ENEMA EMOLLIENS.
Emollient glyster.

Take of
Palm oil, an ounce and a half;
Cows milk, half a pound.
Let the oil be beat up with the yolk of one egg, and then add the milk.

ENEMA FOETIDUM.
Fetid glyster.

Take of
Asafetida, two drams;
Rue,
Savin, each half an ounce;
Oil olive, one ounce;
Oil of amber, half a dram;
Water, one pint and a half.
Boil the water with the rue and savin till half a pint is wasted; then strain off the remaining decoction, and mix with it the asafetida and the oils. Half the quantity of the composition here directed is to be injected at a time.

ENEMA PURGANS.
Purging glyster.

Take of
Common decoction, half a pint;
White soap, one ounce;
Syrup of buckthorn, an ounce and a half.
Mix them together.

ENEMA TEREBINTHINATUM.
Turpentine glyster.

Take of
Common decoction, ten ounces;
Venice turpentine (dissolved in the

the yolk of an egg) half an ounce;

Linseed oil, one ounce.

Mix them together.

THE uses of these compositions are sufficiently obvious from their titles. The starch, anodyne, emollient, and astringent glysters, are used in dysenteries, and other alvine fluxes, to strengthen the tone of the intestines, defend them from being corroded by the acrimonious humours, to heal their exulcerations, and ease the pains which accompany these disorders. The turpentine glyster is injected in nephritic cases; the fetid in hysteric ones. The others are calculated for unloading the intestines of their contents, where the exhibition of purgatives in other forms is improper or unsafe. Glysters have been looked upon by some as mere topical applications, whose operation was confined to the intestine into which they are received. But experience has shown, that in many cases their action is extended much farther: thus the turpentine glyster, above described, promotes the discharge of the kidneys, and communicates to the urine a violet smell; and the anodyne glyster proves narcotic, as if a moderate dose of opium had been swal-

lowed: persons have been inebriated by spirituous glysters; and some affirm, that life has been supported for several days by those of a nutritious kind.

INJECTIO BALSAMICA.

Balsamic injection.

Take of

Balsam of Copaiba, half an ounce;

Lime-water, six ounces;

Honey of roses, two ounces.

Let the balsam be well beaten up with the yolk of one egg; and then gradually add the lime-water and honey.

INJECTIO MERCURIALIS.

Mercurial injection.

Take of

Quicksilver,

Balsam of Copaiba, each half an ounce;

Rose-water, half a pint.

Rub the quicksilver with the balsam till they are perfectly incorporated; then mix with them the yolk of an egg, and afterwards add the rose-water.

THIS and the foregoing preparation are designed to be injected into the urethra in virulent gonorrhœas, for cleansing and deterging the parts.

C H A P. X.

P L A S T E R S.

PLASTERS are composed chiefly of oily and unctuous substances, united with powders into such a consistence, that the compound may remain firm in the cold without sticking to the fingers; that it may be soft and pliable in a small heat, and that by the warmth of the human body it be so tenacious as readily to adhere both to the part on which it is applied, and to the substance on which it is spread.

There is however a difference in the consistence of plasters, according to the purposes they are to be applied to: Thus, such as are intended for the breast and stomach, should be very soft and yielding; whilst those designed for the limbs are made firmer and more adhesive. An ounce of expressed oil, an ounce of yellow wax, and half an ounce of any proper powder, will make a plaster of the first consistence; for a hard one, an ounce more of wax, and half an ounce more of powder may be added. Plasters may likewise be made of resins, gummy-resins, &c. without wax, especially

in extemporaneous prescription: for officinals, these compositions are less proper, as they soon grow too soft in keeping, and fall flat in a warm air.

It has been supposed, that plasters might be impregnated with the specific virtues of different vegetables, by boiling the recent vegetable with the oil employed for the composition of the plaster. The cotion was continued till the herb was almost crisp, with care to prevent the matter from contracting a black colour: after which the liquid was strained off, and set on the fire again till all the aqueous moisture had exhaled. We have already observed, that this treatment does not communicate to the oils any very valuable qualities even relative to their use in a fluid state: much less can plasters, made with such oils, receive any considerable efficacy from the herbs.

Calces of lead, boiled with oils, unite with them into a plaster of an excellent consistence, and which makes a proper basis for several other plasters.

In

In the boiling of these compositions, a quantity of water must be added, to prevent the plaster from burning and growing black. Such water, as it may be necessary to add during the boiling, must be previously made hot; for cold liquor would not only prolong the process, but likewise occasion the matter to explode, and be thrown about with violence, to the great danger of the operator: this accident will equally happen upon the addition of hot water, if the plaster is extremely hot.

EMPLASTRUM ANODYNUM.

Anodyne plaster.
Edinb. +

Take of

White resin, eight ounces;
Tacamahaca, in powder,
Galbanum, each four ounces;
Cummin seeds, three ounces;
Black soap, four ounces.

Melt the resin and the gums together; then add the powdered seeds and the soap, and make the whole into a plaster.

THIS plaster sometimes gives ease in slight rheumatic pains.

EMPLASTRUM FÆTIDUM, vulgo ANTIHYSTERICUM.

Fetid, commonly called Anti-hysterical plaster.
Edinb.

Take of

Common plaster,
Asafetida, strained, each two parts;
Yellow wax,
Strained galbanum, each one part.

Mix, and make them into a plaster.

THIS plaster is applied to the umbilical region, or over the whole

abdomen, in hysterical cases; and sometimes with good effect.

EMPLASTRUM ATTRAHENS.

Drawing plaster.
Lond.

Take of

Yellow wax, each three pounds;
Tried mutton suet, one pound.

Melt them together, and whilst the mass remains fluid, pass it through a strainer.

THIS is a very well contrived plaster for the purpose expressed in its title. It is calculated to supply the place of melilot plaster; whose great irritation, when employed for the dressing of blisters, has been continually complained of. This was owing to the large quantity of resin contained in it, which is here for that reason retrenched. It should seem that, when designed only for dressing blisters, the resin ought to be entirely omitted, unless where a continuance of the pain and irritation, excited by the vesicatory, is required. Indeed plasters of any kind are not very proper for this purpose: their consistence makes them sit uneasy, and their adhesiveness renders the taking them off painful. Cerates, which are softer and less adhesive, appear much more eligible: the *Ceratum album* will serve for general use; and for some particular purposes, the *Ceratum citrinum* may be applied.

EMPLASTRUM CEREUM.

Wax plaster.
Edinb.

Take of

Yellow wax, three parts;
White resin,
Mutton suet, each two parts.

Melt them together into a plaster; which

which supplies the place of melilot plaster.

THIS plaster is similar to the foregoing, but the further reduction of the resin renders it for some purposes more eligible.

EMPLASTRUM CEPHALICUM.

Cephalic plaster.

Lond.

Take of

Burgundy pitch, two pounds;
Soft labdanum, one pound;
Yellow resin,
Yellow wax, each four ounces;
The expressed oil, called *oil of mace*, one ounce.

Melt the pitch, resin, and wax together; then add, first the labdanum, and afterwards the oil of mace.

Edinb. +

Take of

Tacamahaca in powder,
Yellow wax,
Venice turpentine, each four ounces;
Oil of lavender, two drams;
Oil of amber, one dram.

Melt the tacamahaca with the wax, and then add the turpentine, that a plaster may be formed: when this compound is taken from the fire and grown almost cold, mix in the oils.

THESE plasters are applied in weakness or pains of the head, to the temples, forehead, &c. and sometimes likewise to the feet. Schulze relates, that an inveterate rheumatism in the temples, which at times extended to the teeth, and occasioned intolerable pain, was completely cured in two days by a plaster of this kind (with the addition of a little opium) applied to the part, after many other remedies had been

tried in vain. He adds, that a large quantity of liquid matter exuded under the plaster in drops, which were so acrid as to corrode the cuticle.

EMPLASTRUM de CICUTA cum AMMONIACO.

Plaster of hemlock with ammoniacum.

Edinb. +

Take of

Juice of hemlock leaves, four ounces;

Gum ammoniacum, eight ounces;
Vinegar of squills, as much as is sufficient to dissolve the gum.

Add the juice to this solution; and having strained the mixture, boil it to the consistence of a plaster.

THIS plaster was formerly supposed to be a powerful cooler and discutient, and to be particularly serviceable against swellings of the spleen and distentions of the hypochondres. For some time past, it has been among us entirely neglected; and hence the London College, at the late revival of their Pharmacopœia, omitted it. But the high resolvent power which Dr Stork has discovered in hemlock, and which he found it to exert in this as well as in other forms, intitle it to further trials. The plaster appears very well contrived, and the additional ingredients well chosen for assisting the efficacy of the hemlock.

EMPLASTRUM COMMUNE.

Common plaster, usually called

Diachylon.

Lond.

Take of

Oil olive, one gallon;

Litharge, ground into a most subtile powder, five pounds.

Boil them over a gentle fire, with about two pints of water, keeping them continually stirring till the oil and litharge unite, and
ac-

acquire the consistence of a plaster. If all the water should be consumed before this happens, add some more water previously made hot.

Edinb.

- Take of
Oil olive, two parts;
Litharge, one part;
Boil them, as above directed, into a plaster.

THE heat in these processes should be gentle, and the matter kept continually stirring, otherwise it swells up, and is apt to run over the vessel. If the composition proves discoloured, the addition of a little white lead and oil will improve the colour.

These plasters are the common application in excoriations of the skin, slight flesh wounds, and the like. They keep the part soft, and somewhat warm, and defend it from the air, which is all that can be expected in these cases from any plaster. Some of our industrious medicine-makers have thought these purposes might be answered by a cheaper composition, and accordingly have added a large quantity of common whiting and hogs-lard: this, however, is by no means allowable, not only as it does not stick so well, but likewise as the lard is apt to grow rancid and acrimonious. The counterfeit is distinguishable by the eye.

EMPLASTRUM COMMUNE ADHÆSIVUM.

*Common sticking plaster.
Lond.*

- Take of
Common plaster, three pounds;
Yellow resin, half a pound.
Melt the common plaster over a very gentle fire; then add the resin, first reduced into powder, that it

may melt the sooner; and mix them all together.

This plaster may otherwise be made, by taking, instead of the common plaster, its ingredients oil and litharge; and adding the resin a little before they have come to the due consistence; then continue the boiling till the plaster is finished.

It turns out the most elegant when made by this last method.

EMPLASTRUM ADHÆSIVUM.

*Sticking plaster.
Edinb.*

- Take of
Common plaster, five parts;
White rosin, one part.
Melt them together, so as to make a plaster.

THESE plasters are used chiefly as adhesives for keeping on other dressings, &c.

EMPLASTRUM COMMUNE cum GUMMI.

*Common plaster with gums.
Lond.*

- Take of
Common plaster, three pounds;
Galbanum, strained, eight ounces;
Common turpentine,
Frankincense, each three ounces.
Melt the galbanum with the turpentine over a gentle fire, and sprinkle in the frankincense, reduced to powder; then gradually mix with these the common plaster, previously liquefied by a very gentle heat.
Or, instead of the common plaster already made, you may take the oil and litharge boiled together: as soon as these unite, before they have acquired the consistence of

a plaster, the other ingredients are to be added.

EMPLASTRUM GUMMOSUM.

*Gum plaster.
Edinb.*

Take of

Common plaster, eight parts;
Gum ammoniacum, strained,
Strained galbanum,
Yellow wax, each one part.

Make them into a plaster according to art.

BOTH these plasters are used as digestives and suppuratives; particularly in abscesses, after a part of the matter has been matured and discharged, for suppurating or discharging the remaining hard part.

EMPLASTRUM CROCEUM, vulgo OXYCROCEUM.

*Saffron plaster, commonly called
Oxycroceum.
Edinb. +*

Take of

Burgandy pitch,
Yellow wax, each one pound;
Galbanum,
Tar, each half a pound;
Saffron, rubbed into powder, two ounces.

Let the Burgandy pitch, wax, and galbanum, be melted together over a gentle fire; then add the tar and saffron, and make the whole into a plaster.

THIS infrugal and injudicious composition is said to strengthen the parts to which it is applied, especially the tendinous ones; to warm in a great degree, and to resolve and disperse cold tumors. Tar is now introduced as an ingredient, in the room of Venice turpentine, myrrh, and olibanum.

EMPLASTRUM CYMINO.

*Cummin plaster.
Lond.*

Take of

Burgandy pitch, three pounds;
Yellow wax,
Cummin seeds,
Caraway seeds,
Bay berries, each three ounces.

Melt the pitch with the wax; then sprinkle in the other ingredients, first reduced into a powder, and mix the whole well together.

THIS plaster stands recommended as a moderately warm discutient; and is directed by some to be applied to the hypogastric region, for strengthening the viscera, and expelling flatulences.

EMPLASTRUM DEFENSIVUM, five ROBORANS.

*Defensive, or Strengthening plaster.
Edinb.*

Take of

Common plaster, twenty-four parts;
White rosin, six parts;
Yellow wax,
Olive oil, each three parts;
Colcothar of vitriol, eight parts.

Grind the colcothar with the oil, and then add it to the other ingredients when they are melted.

THIS plaster is laid round the lips of wounds and ulcers, over the other dressings, for defending them from inflammation and a fluxion of humours; which however, as Mr Sharp very justly observes, plasters, on account of their consistence, tend rather to bring on than to prevent.

It is also used in weaknesses of the large muscles, as of the loins; and its effects seem to proceed from the artificial mechanical support given to the part; which may also be done
by

by any other plaster which adheres with equal firmness.

EMPLASTRUM c MELILOTO.

Melilot plaster.

Take of

Melilot leaves, fresh, six pounds;
Beef suet, three pounds;
White resin, eight pounds;
Yellow wax, four pounds.

Boil the herb in the melted suet till it is almost crisp; then strongly press out the suet, and adding the resin and wax, boil the whole a little, so as to make a plaster thereof.

THIS plaster has been frequently made use of for dressing blisters: see **EMPLASTRUM ATTRAHANS**. The London College have diminished the quantity of resin, to render the composition less irritating; and likewise omitted the herb, as being of no significance towards the use of the plaster, and of a very disagreeable scent; a circumstance of primary consequence to be avoided in disorders, where freedom from disturbance, and every means that can contribute to quiet rest, ought by all possible endeavours to be procured: not to mention the mischievous adulterations sometimes practised in this plaster with irritating materials, for procuring the green colour, which is made its marketable characteristic, more compendiously than by the decoction of the herb. The most certain method of discovering abuses of this kind, is to put a little of the plaster into some spirit of sal ammoniac; if it tinges the spirit blue, we may be certain it is adulterated. The London College has substituted to this plaster the *Emplastrum attrahens*, and the Edinburgh the *Emplastrum ceruinum*.

EMPLASTRUM ex AMMONIACO cum MERCURIO.

Plaster of ammoniacum with mercury.
Lond.

Take of

Gum ammoniacum, strained, one pound;
Quicksilver, three ounces;
Simple balsam of sulphur, one dram.

Grind the quicksilver with the balsam of sulphur till it ceases to appear; then, having melted the ammoniacum, add it gradually a little before it cools to this mixture; and let the whole be perfectly mingled together.

THIS is a very well contrived mercurial plaster: if in some cases it should not prove adhesive enough, the addition of a small quantity of turpentine will readily make it so.

EMPLASTRUM COMMUNE cum MERCURIO.

Common plaster with mercury.
Lond.

Take of

Common plaster, one pound;
Quicksilver, three ounces;
Simple balsam of sulphur, one dram.

Make them into a plaster, after the same manner as the foregoing.

EMPLASTRUM c HYDRARGYRO, five COERULEUM.

Mercurial, or blue plaster.
Edinb.

Take of

Olive oil,
White rosin, each one part;
Quicksilver, three parts;
Common plaster, six parts.

Let the quicksilver be ground with the oil and rosin, melted together, and then cooled till the globules disappear; then add by degrees

greases the common plaster, melted, and let the whole be accurately mixed.

THESE mercurial plasters are looked on as powerful resolvents and discutients, acting with much greater certainty in these intentions than any composition of vegetable substances alone; the mercury exerting itself in a considerable degree, and being sometimes introduced into the habit in such quantity as to affect the mouth. Pains in the joints and limbs from a venereal cause, nodes, tophs, and beginning indurations of the glands, are said sometimes to yield to them.

EMPLASTRUM e MINIO.

Red lead plaster.

Lond.

Take of

Oil olive, four pints;

Red lead, reduced to a most subtile powder, two pounds and a half.

Make them into a plaster, after the manner directed for preparing the common plaster: but more water is here required, and greater care is necessary to prevent the composition from burning and growing black.

THIS is used for the same purposes as the common or diachylon plaster, from which it differs little otherwise than in colour. It has an inconvenience of not sticking so well; and therefore the Edinburgh College have now omitted this composition.

EMPLASTRUM de MINIO cum SAPONE.

Red lead plaster with soap.

This is made by adding to the foregoing plaster taken from the fire as soon as the moisture is evaporated, and whilst hot, half a pound of Spanish soap cut into thin

slices: stir the whole strongly together until the soap is liquefied, and a plaster formed according to art.

THIS is much esteemed by some, for discussing gouty tumors, and the juices stagnating after sprains. Whatever virtues it may have distinct from the general ones of the applications of this class, they depend entirely upon the soap; and soap in the form of plasters does not appear to exert much of the efficacy which it does in forms of a softer consistence.

EMPLASTRUM e MUCILAGINIBUS.

Plaster of mucilages.

Lond.

Take of

Yellow wax, forty ounces;

Oil of mucilages, half a pint;

Gum ammoniacum, strained, half a pound;

Common turpentine, two ounces.

Melt the ammoniacum with the turpentine; and having, in another vessel, liquefied the wax with the oil, add this latter mixture to the other.

SOME have been accustomed to use, instead of the oil of mucilages, common oil of olive, flavoured with fenugreek seeds; and possibly this substitution may be admitted as a venial one; for the oil of mucilages, genuinely made, contains scarce any thing of any of the ingredients, except that part of the fenugreek seeds wherein their flavour resides, the mucilaginous materials serving only to provide it with a name. See page 344.

EMPLASTRUM ROBORANS.

Strengthening plaster.

Lond.

Take of

Common plaster, two pounds;

Frankincense, half a pound;

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Dra.

Dragons-blood, three ounces.
Melt the common plaster, and add to it the other ingredients reduced into a powder.

The dragons-blood should be reduced into a very fine powder, otherwise the mixture will not be of an uniform colour.

THIS is a reformation of the laborious and injudicious composition described in our preceding Pharmacopœias, under the title of *Emplastrum ad herniam*; and though far the most elegant and simple, is as effectual for that purpose as any of the medicines of this kind. If constantly worn with a proper bandage, it will, in children, frequently do service; though, perhaps, not so much from any strengthening quality of the ingredients, as from its being a soft, close, and adhesive covering. It has been supposed that plasters composed of styptic medicines constringe and strengthen the part to which they are applied, but on no very just foundation; for plasters in general relax rather than astringe, the unctuous ingredients necessary in their composition counteracting and destroying the effect of the others.

EMPLASTRUM e SAPONE.

Soap plaster.
Lond.

Take of

Common plaster, three pounds;
Hard soap, half a pound.

Having melted the common plaster, mix with it the soap, and boil them to the consistence of a plaster. Take care not to let it grow too cold before you form it into rolls, for then it will prove too brittle.

THIS plaster differs only in colour from the red-lead plaster with soap above mentioned.

EMPLASTRUM SAPONACEUM.

Saponaceous plaster.
Edinb.

Take of

Common plaster, four parts;
Gum plaster, two parts;
Castile soap, sliced, one part.

To the plasters melted together, add the soap; then boil for a little, so as to form a plaster.

HERE the addition of the gums is supposed to promote the resolvent virtue of the soap.

EMPLASTRUM STOMACHICUM.

Stomach plaster.
Lond.

Take of

Soft labdanum, three ounces;
Frankincense, one ounce;
Cinnamon,
The expressed oil, called oil of mace, each half an ounce;
Essential oil of mint, one dram.

Having melted the frankincense, add to it, first the labdanum softened by heat, and then the oil of mace; afterwards mix these with the cinnamon and oil of mint; and beat them together in a warm mortar into a mass, which is to be kept in a close vessel.

THIS is a very elegant stomach plaster. It is contrived so as to be easily made occasionally (for these kinds of compositions, on account of their volatile ingredients, are not fit for keeping; and to be but moderately adhesive, so as not to offend the skin; and that it may without difficulty be frequently taken off and renewed, which these sorts of applications, in order to their producing any considerable effect, require to be.

Edinb.

Edinb. †

Take of

Yellow wax, eight ounces;
 Tacamahaca, in powder, four
 ounces;
 Cloves, powdered, two ounces;
 Palm oil, six ounces;
 Expressed oil of mace, an ounce
 and a half;
 Essential oil of mint, two drams.

Melt the wax and tacamahaca with
 the palm oil; then removing the
 mixture from the fire, add the o-
 ther ingredients, and make them
 into a plaster according to art.

THESE plasters are applied to the
 pit of the stomach, in weakness of
 that viscus, in vomitings, the disorder
 improperly called the *heart-*
burn, &c. and sometimes with good
 success. The pit of the stomach,
 however, as Hoffman has observed,
 is not always the most proper place
 for applications of this kind to be
 made to: if applied to the five lower
 ribs of the left side towards the back,
 the stomach will in general receive
 more benefit from them; for it ap-
 pears from anatomical inspection,
 that greatest part of it is situated
 there.

EMPLASTRUM VESICA- TORIUM.

*Blistering plaster, or Epispastic
 plaster.*
 Lond.

Take of

Drawing plaster, two pounds;
 Cantharides, one pound;
 Vinegar, half a pint.

Melt the drawing plaster; and a lit-
 tle before it grows stiff, mix in
 the cantharides, reduced into a
 most subtile powder; then add
 the vinegar, and work them well
 together.

Edinb.

• Take of

Hogs-lard,
 Yellow wax,
 White resin,
 Cantharides, each equal weights.
 Beat the cantharides into a fine
 powder, and add them to the o-
 ther ingredients, previously melt-
 ed, and removed from the fire.

Compound epispastic plaster.
 Edinb.

Take of

Burgundy pitch, twelve ounces;
 Yellow wax, four ounces;
 Venice turpentine, eighteen oun-
 ces;
 Mustard seed,
 Black pepper, each one ounce;
 Verdegriis, two ounces;
 Cantharides, twelve ounces.

Melt the wax and pitch together;
 then add the turpentine; and
 when this is liquefied, sprinkle
 in the other ingredients, first pow-
 dered and mixed together; keep-
 ing them continually stirring, so
 as to make a plaster thereof ac-
 cording to art.

The blistering plasters are to be
 kept in oiled bladders.

THIS last composition has long
 been used in some particular shops
 as the most infallible blister; though
 either of the other two answers the
 purpose very successfully. Whether
 the vinegar in the first is of any ad-
 vantage, is greatly to be doubted.
 In some cases indeed, it has been ob-
 served, that the plaster without this
 addition seemed at first to fail of its
 effect; and that on taking it off and
 rubbing the part with vinegar, the
 same plaster applied again has bli-
 stered freely: but this does not ap-
 pear to be so much owing to any

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pe-

peculiar quality of the vinegar, as to its softening the skin when applied in this manner, and fitting it for the action of the cantharides: when mixed with the other ingredients of the plaster, it has not this effect. It likewise exhales in keeping, in so much that the composition, though sufficiently soft at first, becomes in no long time too dry. Some have been accustomed to spare the trouble of making any plaster on purpose for blistering, by occasionally spreading some of the cantharides, in powder, upon a common plaster.

EMPLASTRUM ANODYNO-DISCUTIENTS.

An anodyne and discutient plaster.

Take of

Cummin plaster, two ounces;

Camphor, three drams;

Thebaic extract, one dram and a half.

Grind the camphor, with some drops of oil olive, into a very subtile

powder, and then mix it with the other ingredients according to art into a plaster.

EMPLASTRUM CALIDUM.

Warm plaster.

Take of

Gum plaster, one ounce;

Blistering plaster, two drams.

Melt them together over a gentle fire.

EMPLASTRUM SUPPURANS.

Suppurating plaster.

Take of

Gum plaster, an ounce and a half;

Burgundy pitch, half an ounce.

Melt them together.

THE uses of the three foregoing compositions, which are taken from our hospitals, are sufficiently obvious from their titles. The warm plaster is a very stimulating application, of great use in fixt pains, as in the rheumatism, sciatica, beginning chilblains, &c.

C H A P. XI.

OINTMENTS, LINIMENTS, and CERATES.

OINTMENTS and liniments differ from plasters little otherwise than in consistence. Any of the officinal plasters, diluted with so much oil as will reduce it to the thickness of stiff honey, forms an ointment: by farther increasing the oil, it becomes a liniment.

‘In making these preparations, fat and resinous substances are to be melted with a gentle heat; then to be constantly stirred, sprinkling in at the same time the dry ingredients, if any such are ordered, in the form of a very fine powder, till the mixture on diminishing the heat becomes stiff. *Edinb.*

‘It is to be understood that the above general directions are meant to apply to each particular composition contained in the present edition of the *Edinburgh Pharmacopœia*. It is also to be observed, that where any compositions are ordered as bases or ingredients of others; the College always refer to those made according to their own formula.’

UNGUENTUM ÆGYPTIACUM.

Edinb. +

Take of

Verdegriſ, finely powdered, five ounces;

Honey, fourteen ounces;
Vinegar, seven ounces.

Boil them over a gentle fire to the consistence of an ointment.

MEL ÆGYPTIACUM.

Lond.

Take of

Verdegriſ, reduced into a very subtil powder, five ounces;
Honey, fourteen ounces by weight;
Vinegar, seven ounces by measure.

Boil these ingredients together over a gentle fire, till they have acquired a due consistence and a reddish colour. On keeping this mixture for sometime, the thicker part falls to the bottom; the thinner, which floats on the top, is called *Mel Ægyptiacum*.

THESE preparations are designed only for external use, for cleansing and detarging ulcers, and keeping down fungous flesh: they are serviceable also in venereal ulcerations of the mouth and tonsils. If, for particular purposes, they should be wanted more acrid, they may be occasionally rendered so by shaking the vessel, so as to mix up the thick matter at the bottom (which contains

T t 3

tains greatest part of the verdegris)
with the upper thin one.

UNGUENTUM ALBUM.

White ointment.

Lond.

Take of

Oil olive, one pint ;
White wax, four ounces ;
Spermaceti, three ounces.

Liquefy them by a gentle fire, and
keep them constantly and briskly
stirring, till grown thoroughly
cold.

UNGUENTUM e CERUSSA vulgo ALBUM.

Edinb.

Take of

Simple ointment, five parts ;
Cerusse, one part.

THESE are useful, cooling, emol-
lient ointments, of good service in
excoriations, and other like frettings
of the skin. The cerusse is omit-
ted in the first prescription, on a
suspicion that it might produce some
ill effect, when applied, as these un-
guents frequently are, to the ten-
der bodies of children. Though
there does not seem to be much
danger in this external use of ce-
russe, the addition of it is the less
necessary here, as there is another
ointment containing a more active
preparation of the same metal, the
unguentum saturninum ; which may
be occasionally mixed with this, or
employed by itself, in cases where
saturnine applications are wanted.

UNGUENTUM ALBUM CAMPHORATUM.

Camphorated white ointment.

Lond.

This is made by adding to the white
ointment a dram and a half of
camphor, previously ground with
some drops of oil of almonds,

Edinb. +

Take of

The white ointment, one pound ;
Camphor, rubbed with a little oil,
one dram and a half.

Mix them together.

THESE ointments are supposed to
be more discutient than the forego-
ing, and serviceable against cutane-
ous heats, itching, and serpiginous
eruptions. They should be kept
in close vessels, otherwise the cam-
phor will soon exhale : their smell-
ing strong of this ingredient is the
best mark of their goodness.

UNGUENTUM ex ALTHÆA.

Ointment of marshmallows.

Lond.

Take of

Oil of mucilages, three pints ;
Yellow wax, one pound ;
Yellow resin, half a pound ;
Common turpentine, two ounces.

Melt the resin and wax with the oil ;
then, having taken them from the
fire, add the turpentine, and while
the mixture remains hot strain it.

THIS ointment receives no virtue
from the ingredient which it takes
its name from ; and therefore the
Edinburgh College has omitted it.

UNGUENTUM ANTIPSORICUM.

Ointment against the itch.

Take of

Elecampane root, fresh,
Sharp-pointed dock root, fresh,
each three ounces ;
Water-creffes, fresh and bruised,
ten ounces ;
Hogs lard, four pounds ;
Yellow wax,
Oil of bays, each four ounces ;
Vinegar, one pint ;
Water, three pints.

Bruise the roots, and boil them in
the water and vinegar till half
the liquor is consumed : strain,
and

and strongly press out the remainder, add to it the water-creffes and the lard, and boil them till the moisture is exhaled; then press out the ointment, and liquefy in it the wax and the oil of bays.

Sulphur is added to this ointment occasionally.

UNGUENTUM ANTIPSORICUM CUM MERCURIO.

Ointment against the itch with mercury.

This is made by adding to the foregoing ointment four ounces of quicksilver, killed with a sufficient quantity of Venice turpentine, and mixing them together according to art, into an unguent.

THESE ointments are very inelegant ones, and rarely made use of. The first is likewise precarious in its effects; and though those with sulphur and mercury are of undoubted efficacy, yet they are by no means superior to the more simple ointments of those drugs described hereafter.

UNGUENTUM BASILICUM FLAVUM.

Yellow basilicum ointment.
Lond.

Take of

Oil olive, one pint;
Yellow wax,
Yellow resin,
Burgundy pitch, each one pound;
Common turpentine, three ounces.

Melt the wax, resin, and pitch, along with the oil, over a gentle fire; then take them from the fire, add the turpentine, and whilst the mixture remains hot strain it.

Edinb.

Take of

Hogs lard, eight parts;

White resin, five parts;
Yellow wax, two parts.

THESE are commonly employed in dressings, for digesting, cleansing, and incarnating wounds and ulcers. They differ very little, if at all, in their effects from the *Linimentum Arcaei*.

UNGUENTUM BASILICUM NIGRUM vel TETRAPHARMACUM.

Black basilicum ointment, or ointment of four ingredients.
Lond.

Take of

Oil olive, one pint;
Yellow wax,
Yellow resin,
Dry pitch, each nine ounces.

Melt them all together; and whilst the mixture is hot strain it off.

THIS ointment was formerly of considerable esteem for healing and incarnating wounds, &c. but is said to have an inconvenience of being apt to render them foul, and produce fungous flesh; at present it is rarely made use of; the yellow basilicum, and the liniment of Arcæus, being in general preferred.

In the Edinburgh Pharmacopœia, the black basilicum was directed as follows:

Take of

Yellow wax,
White resin,
Mutton suet,
Tar, each half a pound;
Olive oil, a pint and a half.

Melt them over a gentle fire, stirring them well together; and then strain the ointment.

How far the alterations here made may contribute to prevent the inconveniences above complained of, or indeed whether the objections to the old ointment were well founded,

founded, I cannot take upon me to determine. Those who are the most conversant in the use of these sorts of applications, are apt to ascribe more to the composition than it has any share in producing.

UNGUENTUM BASILICUM VIRIDE.

Green basilicum ointment.
Lond.

Take of

Yellow basilicum, eight ounces;
Oil olive, three ounces by measure;

Verdegris, prepared, one ounce.

Mix, and make them into an ointment.

UNGUENTUM ex AERUGINE.

Ointment of verdegris.
Edinb.

Take of

Basilicum ointment, fifteen parts;
Verdegris, one part.

‘THESE ointments are used for cleansing sores and keeping down fungous flesh. Where ulcers continue to run from a weakness in the vessels of the part, the tonic powers of copper promise considerable advantage.’

UNGUENTUM CITRINUM.

Yellow ointment.
Edinb.

Take of

Quicksilver, one ounce;
Spirit of nitre, two ounces;
Hogs-lard, tried, one pound.

Dissolve the quicksilver in the spirit of nitre, by digestion in a sand-heat; and, whilst the solution is very hot, mix with it the lard, previously melted by itself, and just beginning to grow stiff. Stir them briskly together, in a marble mortar, so as to form the whole into an ointment.

UNGUENTUM CÆRULEUM FORTIUS.

The stronger blue ointment.
Lond.

Take of

Hogs-lard, tried, two pounds;
Quicksilver, one pound;
Simple balsam of sulphur, half an ounce.

Grind the quicksilver with the balsam of sulphur till they are perfectly incorporated; then gradually add the lard heated, and mix them carefully together.

UNGUENTUM ex HYDRARGYRO, five CÆRULEUM.

Mercurial, or blue ointment.
Edinb.

Take of

Quicksilver,
Mutton suet, each one part;
Hogs-lard, three parts.

Grind them diligently in a mortar till the globules disappear.

This ointment may also be prepared with a double or triple proportion of quicksilver.

‘It is probable, that in preparing this ointment a similar effect takes place, as we have alleged to happen in making Plenck’s solution, which see. For the reasons for omitting the turpentine ordered in a former edition, and for directing the suet in this, see UNGUENTUM MERCURIALE.’

This unguent turns out of a much better blue colour than the foregoing, which is of a very dingy hue. Mercurial unguents have in many cases the same effects with the preparations of this mineral taken internally; and are at present frequently employed, not only against cutaneous disorders, as alterants; but likewise in venereal and other obstinate cases, for raising a salivation. The ptyalism excited by unction is said to be attended with the fewest

fewest inconveniences, and to perform the most complete cure. In some constitutions, mercurials taken inwardly run off by the intestines, without affecting the mouth; and in others, they affect the salival glands so quickly, as to occasion a copious ptyalism, without extending their action to the remoter parts, and consequently without removing the cause of the disease.

UNGUENTUM DESICCATIVUM
RUBRUM.

Red desiccative ointment.

Take of

Oil olive, a pint and a half;
White wax, half a pound;
Calamine prepared, six ounces;
Litharge prepared,
Bole armenic, each four ounces;
Camphor, three drams.

Melt the wax in the oil; and having taken them from the fire, gradually sprinkle in the other ingredients, stirring them briskly together into an ointment. The camphor must be previously ground with a little oil of almonds.

THIS is said to be an excellent dryer and healer; but is at present in no great esteem, and rarely kept in the shops.

UNGUENTUM DIAPOMPHOLYGOS.

Ointment of pompholyx.

Take of

Oil olive, twenty ounces;
Juice of the berries of common, or deadly nightshade, eight ounces;
White wax, five ounces;
Cerusse, four ounces;
Burnt lead,
Pompholyx, each two ounces;
Pure frankincense, one ounce.

Boil the oil and the juice over a gentle fire till the juice is exhaled; and towards the end of the coction melt the wax in the oil; then take the mixture from the

fire, and add to it, whilst hot, the other ingredients reduced to powder. Mix and make them into an ointment.

THIS is taken, as the preceding, from a former edition of the Edinburgh Pharmacopœia. It stands recommended against hot inflammatory ulcers and sharp desfluxions on the eyes; but is very rarely made use of, having for some time given place to compositions more simple, though at least equal in efficacy: for which reason it is now omitted by the College.

UNGUENTUM e GUMMI
ELEMI.

Ointment of gum elemi.
Lond.

Take of

Mutton suet, fresh and tried, two pounds;

Gum elemi, one pound;

Common turpentine, ten ounces.

Melt the gum with the suet, and having taken them from the fire, immediately mix in the turpentine; then, whilst the mass remains fluid, strain it off.

UNGUENTUM, vulgo
LINIMENTUM, ARCEI.

The ointment, commonly called Liniment, of Arceus.

Edinb. +

Take of

Hogs-lard, one pound;

Goats suet, or mutton suet, two pounds;

Venice turpentine,

Gum elemi, each a pound and a half.

Melt and strain them, so as to make an ointment, according to art.

THIS unguent has long been in use for digesting, cleansing, and incarnating; and for these purposes is preferred by some to all the other compositions of this kind.

UN-

UNGUENTUM EMOLLIENS.*Emollient ointment.**Edinb. +*

Take of

Palm oil, four pints;

Fresh-drawn linseed oil, three pints;

Yellow wax, one pound;

Venice turpentine, half a pound.

Melt the wax in the oils, over a gentle fire; then mix in turpentine, and strain the ointment; which supplies the place of the ointment of marshmallows.

It is at least equal to that ointment for the purpose expressed in its title, nothing of the mucilage or emollient matter of the marshmallows being there retained. And indeed, if mucilages were blended with ointments, they would possibly diminish, rather than increase their emollient virtue; as they render oils sensibly less unctuous, forming with them a new compound different from the ingredients, and miscible with water into a milky liquor, as we have seen in Chap. vii.

UNGUENTUM MERCURIALE.*Mercurial ointment.*

Take of

Hogs-lard, two ounces;

Quicksilver, one ounce.

Beat them diligently together till the quicksilver disappears. It may likewise be made with two, three, or more times the quantity of quicksilver.

This is the most simple of the mercurial ointments, though possibly as efficacious as any. It requires indeed a great deal more labour to extinguish the mercury in the lard alone, than when turpentine or other like substances are joined: but in recompence the composition with lard is free from an inconvenience

which the others are accompanied with, viz. being apt, by frequent rubbing, to fret tender skins. Some chuse to stiffen this ointment with a fourth part of suet (proportionably diminishing the lard) which gives it a better consistence for use.

UNGUENTUM e MERCURIO PRÆCIPITATO.*Ointment of mercury precipitate.**Lond.*

Take of

Simple ointment, an ounce and a half;

Precipitated sulphur, two drams;

White mercury precipitate, two scruples.

Mix them well together, and moisten them with ley of tartar, that they may be made into an ointment.

This is a very elegant mercurial ointment, and frequently made use of against cutaneous disorders. The preparations of mercury and sulphur here directed are chosen on account of their colour.

UNGUENTUM NERVINUM.*Nerve ointment.*

Take of

Southernwood,

Marjoram, (or origanum,)

Mint,

Pennyroyal,

Rue,

Rosemary, each, fresh gathered, six ounces;

Neats-foot oil, five pints;

Beef suet, three pounds;

Oil of bays, half a pint.

Boil the herbs, with the neats-foot oil and suet, till the aqueous moisture is exhaled; then press and strain out the liquid, and adding to it the oil of bays, make the whole into an ointment.

This ointment is designed, as its title

title expresses, for warming and strengthening the nerves. The above form is from a former edition of the Edinburgh Pharmacopœia. It is an ill contrived one: for besides the ingredients being more numerous than there is any occasion for, the method of treating them is very exceptionable. The warm, stimulating, nervine virtues of the herbs consist in their volatile parts, which are lost in the boiling of them with the oil. The most effectual method of impregnating ointments with these virtues of vegetables, is that which we have formerly proposed, and which the College has now received, adding a suitable quantity of the essential oil of the subject. 'In a later edition it stood as follows:'

Edinb.

Take of

Mutton suet, two pounds;
Oil of chamomile (by decoction)
one pint;
Oil of bays, a pint and a half;
Essential oil of origanum, or of
rosemary, two ounces.

Melt the suet, over a gentle fire, in the oil of chamomile, so as to make an ointment thereof; which being removed from the fire, stir into it the oil of bays and essential oil.

SOME, instead of mixing any essential oil with the composition, are accustomed to rub a few drops of it upon the surface of the plaster when spread.

UNGUENTUM NUTRITUM.

The ointment called Nutritum.

Edinb. +

Take of

Litharge,
Vinegar, each two ounces;
Oil olive, six ounces.

Rub them in a mortar, adding the

oil and vinegar, alternately, by little and little at a time, till the vinegar ceases to appear, and the ointment becomes uniform and white.

THIS ointment is troublesome to make, and does not keep well, the vinegar exhaling, so as to leave the compound too stiff: for which reason, it is now directed to be made in less quantity than in former editions. It is supposed to be a good cooler and desiccative; and is occasionally used in excoriations, slight serpiginous eruptions, and for anointing the lips of wounds or ulcers that itch much, or tend to inflammation.

UNGUENTUM OPHTHALMICUM.

Eye ointment.

Take of

Ointment of tutty, an ounce and
a half;
Saturnine ointment, half an
ounce;
Camphor, half a dram.

Mix and make them into an ointment according to art.

This ointment may likewise be made with two, three, or more times the quantity of camphor.

THIS unguent is very well contrived for the purpose expressed in its title; scarce any of those commonly met with being of equal efficacy in inflammations and hot acrid defluxions on the eyes. But as a good deal of caution is requisite in the use of saturnine applications for so tender an organ as the eye; and as compositions of this kind may be easily formed extemporaneously, with such proportions of the ingredients as the prescriber shall think fit; the Edinburgh Pharmacopœia (from a former edition of which the above form is taken) has now omitted it.

UN-

UNGUENTUM c PICE.

Ointment of tar.

Lond.

Take of

Mutton suet, tried,

Tar, each equal weights.

Melt them together, and strain the mixture whilst hot.

Edinb.

Take of

Tar, five parts;

Yellow wax, two parts.

THE first of these compositions, with the addition of half its weight of resin, has long been used in the shops as a cheap substitute to the black basilicum.

UNGUENTUM SAMBUCINUM.

Ointment of elder.

Lond.

Take of

Elder flowers, full blown, four pounds;

Mutton suet, tried, three pounds;

Oil olive, one pint.

Melt the suet with the oil, and in this mixture boil the flowers till they are almost crisp; then strain and press out the ointment.

Edinb. +

Take of

The inner bark of the elder tree,

The leaves of elder, fresh, each four ounces;

Linseed oil, two pints;

White wax, six ounces.

Let the bark and leaves be well bruised, and boiled in the oil till the humidity is consumed; then press out the oil through a strainer, and melt in it the wax, so as to make an ointment.

THESE ointments do not seem superior to some others, which are much neater, and preparable at less

expence. They can scarce be supposed to receive any considerable virtue from the ingredients which they take their name from.

UNGUENT. SATURNINUM.

Saturnine ointment.

Lond.

Take of

Oil olive, half a pint;

White wax, an ounce and a half;

Sugar of lead, two drams.

Let the sugar of lead, reduced into a very subtile powder, be ground with some part of the oil, and the wax melted with the rest of the oil: mix both together, and keep them stirring till the ointment is grown cold.

Edinb.

Take of

Simple ointment, twenty parts;

Sugar of lead, one part.

BOTH these ointments are useful coolers and desiccatives; much superior both in elegance and efficacy to the *nutritum* or *tripharacum*.

UNGUENTUM SIMPLEX.

The simple ointment.

Lond.

Take of

Hogs lard, tried, two pounds;

Rose water, three ounces by measure.

Beat the lard with the rose water till they are well mixed; then melt them over a very gentle fire, and set them by for some time, that the water may subside: pour the lard off from the water, and keep incessantly stirring and beating it about till it grows cold, so as to reduce it into a light incoherent mass: lastly, add so much essence of lemons as will be sufficient to give a grateful odour.

UN-

UNGUENTUM SIMPLEX.

*Simple ointment.**Edinb.*

- Take of
Olive oil, five parts;
White wax, two parts.

Both these ointments may be used for softening the skin and healing chaps. The last is, however, preferable, as it contains not the stimulating essential oils of the former. For the same reason it is also to be preferred as the basis of other more compounded ointments.

UNGUENTUM e SULPHURE.

*Ointment of sulphur.**Lond.*

- Take of
The simple ointment, half a pound;
Flowers of sulphur, unwashed, two ounces;
Essence of lemons, one scruple.
Mix them together.

UNGUENTUM e SULPHURE, five ANTIPSORICUM.

*Ointment of sulphur, or antipsoric ointment.**Edinb.*

- Take of
Hogs lard, four parts;
Sulphur, beat into a very fine powder, one part.
To each pound of this ointment add,
Essence of lemons, or
Oil of lavender, half a dram.

UNGUENTUM AD PSORAM.

Ointment against the itch.

- Take of
Sulphur, one ounce;
White hellebore root, in powder, or crude sal ammoniac, two drams.
Hogs-lard, two ounces.

Mix, and make them into an ointment.

SULPHUR is a certain remedy for the itch, more safe than mercury. Dr Pringle observes, unless a mercurial unction was to touch every part of the skin, there can be no certainty of success; whereas, by a sulphureous one, a cure may be obtained by only partial unction, the animalcula, which 'are supposed to' occasion this disorder, being, like other insects, killed by the sulphureous steams which exhale by the heat of the body. As to the internal use of mercury, which some have accounted a specific, there are several instances of men undergoing a complete salivation for the cure of the lues venerea, without being freed from the itch: 'but there are also a multitude of instances of men undergoing a long course of sulphur without effect, and who were afterwards readily cured by mercury.'

The quantity of ointment, above directed, serves for four unctions: the patient is to be rubbed every night; but to prevent any disorder that might arise from stopping too many pores at once, a fourth part of the body is to be rubbed at one time. Though the itch may thus be cured by one pot of ointment, it will be proper to renew the application, and to touch the parts most affected, for a few nights longer, till a second quantity also is exhausted; and in the worst cases, to subjoin the internal use of sulphur, not with a view to purify the blood, but to diffuse the steams more certainly through the skin; there being reason to believe, that the animalcula may sometimes lie too deep to be thoroughly destroyed by external applications.

UN.

UNGUENTUM TRIPHARMACUM.

Ointment of three ingredients.
 Lond.

Take of
Common plaster, four ounces;
Oil olive, two ounces by measure;
Vinegar, one ounce by measure.
Boil them together over a gentle fire,
keeping them continually stirring
till they are reduced to the con-
sistence of an ointment.

THIS is a new method of prepa-
ring the *Unguentum nutritum*, much
less troublesome than the one al-
ready described under that title. The
composition proves likewise more
smooth and uniform, and not so li-
able to grow dry in keeping. This
ointment is nevertheless inferior,
both in respect of elegance and ef-
ficacy, to the *Unguentum saturni-
num*.

UNGUENTUM TUTIÆ.

Ointment of tutty.
 Lond.

Let any quantity of prepared tutty
be mixed with as much purified
vipers fat as is sufficient to re-
duce it into the consistence of a
soft ointment.

Edinb.

‘Take of
Simple liniment, five parts;
Prepared tutty, one part.’

BOTH calamine and tutty act only
by virtue of the zinc they contain,
and calamine appears to contain the
most of the two, and likewise to be
the least variable in its contents. But
the pure flowers prepared from zinc
itself are doubtless preferable to ei-
ther.

‘THE Edinburgh College has
therefore now given the following
formula.

UNGUENTUM e CALCE ZINCI.

Ointment of calx of zinc.
 Edinb.

‘Take of
Simple liniment, six parts;
Calx of zinc, one part.’

UNGUENTUM TUTIÆ CAMPHORATUM.

Camphorated ointment of tutty.
 Edinb. +

This is made by adding to the
foregoing ointment two drams of
camphor. It is prepared also with
a double quantity of camphor.

‘THE chief use of the foregoing
ointments is in inflammations of the
eye. The viper’s fat in the first of
them is a trifling singularity.’

UNGUENTUM VERMIFUGUM.

Ointment against worms.

Take of
Lavender cotton,
Wormwood,
Rue,
Savin,
Tansy leaves, fresh gathered, each
two ounces;
Oil olive, a pint and half;
Hogs lard, one pound;
Yellow wax, three ounces;
Ox gall,
Socotorine aloes, each an ounce
and a half;
Coloquintida,
Wormseed, each one ounce.

Bruise the herbs, and boil them with
the oil and lard till the aqueous
moisture is evaporated; then press
the liquor through a strainer,
melt in it the wax, and after-
wards add the other ingredients,
boiling and stirring them toge-
ther, so as to make an ointment.
The aloes, coloquintida, and
worm-seed, must be previously
reduced into a very subtle pow-
der.

THIS ointment is rubbed on the bellies of children for destroying worms, and sometimes, as is said, with good success. It is taken from a former edition of the Edinburgh Pharmacopœia.

UNGUENTUM ad
VESICATORIA [L.]

Ointment for blisters.
Lond.

Take of

Hogs lard, tried,
Blistering plaster, each equal weight.

Melt them together over a very gentle fire, and keep them constantly stirring till grown cold.

UNGUENTUM EPISPASTI-
CUM e PULVERE CAN-
THARIDUM.

Epispastic ointment from powder of cantharides.
Edinb.

Take of

Basilicum ointment, seven parts;
Powdered cantharides, one part.

THESE ointments are added in the dressings for blisters, intended to be made *perpetual* as they are called, or to be kept running for a considerable time, which in many chronic, and some acute cases, they are required to be. Particular care should be taken, that the cantharides employed in these compositions be reduced into very subtil powder, and that the mixtures be made as equal and uniform as possible.

UNGUENTUM EPISPASTI-
CUM ex INFUSO CAN-
THARIDUM.

Epispastic ointment from infusion of cantharides.
Edinb.

Take of

Cantharides,
White resin,

Yellow wax, each one ounce;
Hogs lard,
Venice turpentine, each two ounces;
Boiling water, four ounces.

Infuse the cantharides in the water, in a close vessel, for a night; then strongly press out and strain the liquor, and boil it with the lard till the watery moisture is consumed; then add the resin, wax, and turpentine, and make the whole into an ointment.

THIS ointment, containing the soluble parts of the cantharides uniformly blended with the other ingredients, is more commodious, and occasions less pain, though not less effectual in its intention, than the two foregoing compositions with the fly in substance.

UNGUENTUM VIRIDE.

Green ointment.
Lond.

Take of

The green oil, three pints;
Yellow wax, ten ounces.

Melt them together over a gentle fire, and keep the mixture continually stirring until it is grown cold.

THIS ointment does not seem to receive any particular virtue from the ingredients to which its colour is owing.

LINIMENTUM ALBUM.

White liniment.
Lond.

Take of

Oil olive, three ounces by measure;
Spermaceti, six drams;
White wax, two drams.

Melt them together over a gentle fire, and keep them constantly and briskly stirring till grown cold.

LINI-

LINIMENTUM SIMPLEX.*Simple liniment.**Edinb.*

- Take of
 Olive oil, four parts;
 White wax, one part.

THE former of these only differs in consistence from the *Unguentum album* of the London, and the latter from that of the *Unguentum simplex* of the Edinburgh, Pharmacopœia.

BALSAMUM VIRIDE.*Green balsam.**Edinb. +*

- Take of
 Linseed oil,
 Oil of turpentine, each one pound;
 Verdégriis, in powder, three drams.
 Boil and stir them well together till the verdégriis is dissolved.

A BALSAM, similar to this, is said to have been greatly valued by our surgeons as a detergent.

LINIMENTUM TRIPHARMACUM.*Liniment of three ingredients.**Lond.*

- Take of
 Common plaster, four ounces;
 Oil olive, a quarter of a pint;
 Vinegar, one ounce by measure.
 Boil them over a gentle fire, continually stirring them until they acquire the consistence of a liniment.

THIS is the same with the *Unguentum tripharmacum*, except that the quantity of oil is here increased, to give the compound the softer consistence of a liniment.

LINIMENTUM VOLATILE.*Volatile liniment.*

- Take of
 Oil of hartshorn,
 Spirit of hartshorn, each equal parts.

2

Mix them together.

Dr Pringle observes, that in the inflammatory quinsy, or strangulation of the fauces; a piece of flannel, moistened with this mixture, and applied to the throat, to be renewed every four or five hours, is one of the most efficacious remedies. By means of this warm stimulating application, the neck, and sometimes the whole body, is put into a sweat, which, after bleeding, either carries off, or lessens the inflammation. Where the skin cannot bear the acrimony of this mixture, the volatile liniment of the shops may be made trial of.

CERATUM ALBUM.*White cerate.**Lond.*

- Take of
 Oil olive, a quarter of a pint;
 White wax, four ounces;
 Spermaceti, half an ounce.
 Liquefy them all together, and keep them stirring till the cerate is grown quite cold.

CERATUM SIMPLEX.*Simple cerate.**Edinb.*

- Take of
 Olive oil, six parts;
 White wax, three parts;
 Spermaceti, one part.

THE former of these differs from the white ointment and liniment of the London, and the latter from the simple ointment and liniment of the Edinburgh Pharmacopœia, only in being of a thicker consistence.

CERATUM CITRINUM.*Yellow cerate.**Lond.*

- Take of
 Yellow basilicum ointment, half a pound;

White

Yellow wax, one ounce.
Melt them together.

THIS is no otherwise different from the yellow basilicum than being of a stiffer consistence, which renders it for some purposes more commodious.

CERATUM EPULOTICUM.

Epulotic cerate.
Lond.

Take of
Oil olive, one pint;
Yellow wax,
Calamine prepared, each half a pound.
Liquefy the wax with the oil, and as soon as the mixture begins to grow stiff, sprinkle in the calamine; keeping them constantly stirring together till the cerate is grown quite cold.

CERATUM e LAPIDE CALAMINARI.

Cerate of Calamine.
Edinb.

Take of
Simple cerate, five parts;
Calamine prepared, one part.

THESE compositions are formed upon the cerate which Turner strongly recommends in cutaneous ulcerations and excoriations, and which has been usually distinguished by his name. They appear from experience to be excellent epulotics, and as such are frequently made use of in practice.

CEAATUM MERCURIALE.

Mercurial cerate.
Lond.

Take of
Yellow wax,
Hogs lard, tried, each half a pound;
Quicksilver, three ounces;

Simple balsam of sulphur, one dram.

Melt the wax with the lard; then gradually add this mixture to the quicksilver and balsam of sulphur previously ground together.

UNGUENTUM PARALYTICUM.
Palsy ointment.

Take of
Hogs lard,
Oil of bays, each four ounces;
Strong spirit of vitriol, one ounce.
Mix, and make them into an unguent.

THIS irritating composition is applied to numbed or paralytic limbs: it soon reddens and inflames the skin, and when this effect is produced, must be taken off; after which, the part is to be anointed with any emollient unguent, as that of elder.

UNGUENTUM DIGESTIVUM.
Digestive ointment.

Take of
Yellow basilicum,
Black basilicum, each eight ounces;
Balsam of turpentine, four ounces;
Mix, and make them into an ointment.

LINIMENTUM ANODYNUM.
Anodyne liniment.

Take of
Nerve ointment, three ounces;
Balsam of turpentine, one ounce.
Mix them together.

LINIMENTUM HÆMORRHOIDALE.
Liniment for the piles.

Take of
Emollient ointment, two ounces;
Liquid laudanum, half an ounce.
Mix these ingredients with the yolk of an egg, and work them well together.

C H A P. XII.

E P I T H E M S.

EPITHEMA
VESICATORIUM.*Blistering epithem.**Lond.*

TAKE of

Cantharides, reduced into a most
subtile powder,

Wheat flour, each equal weights.

Make them into a paffe with vine-
gar.

THIS composition is of a softer
consistence than the blistering pla-
sters, and for this reason is in some
cases preferred. Practitioners differ
with regard to the degree of consist-
ence and adhesiveness most proper
for applications of this kind, and
sometimes vary them occasionally.

CATAPLASMA e CYMINO.

*Cataplasn of cummin.**Lond.*

Take of

Cummin seeds, half a pound;

Bay berries,

Scordium leaves dried,

Virginian snakeroot, each three
ounces;

Cloves, one ounce;

Honey, thrice the weight of the
powdered species.

Make them into a cataplasn.

THIS is a reformation of the
THERIACA LONDINENSIS, which for
some time past has been scarce other-
wise made use of than as a warm ca-
taplasn: only such of its ingredients
are retained as contribute most to
this intention.

CATAPLASMA AROMA-
TICUM.*Aromatic cataplasn.**Edinb. +*

Take of

Long birthwort root,

Bay berries, each four ounces;

Sweet fennel seeds,

Mint leaves, each three ounces;

Jamaica pepper,

Myrrh, each two ounces;

Honey, thrice the weight of the
powders.

Mix and make them into a cata-
plasn; which supplies the place
of theriaca for external purposes.

CATAPLASMA DISCU-
TIENS.*Discutient cataplasn.**Edinb. +*

Take of

Bryony root, three ounces;

Elder flowers, one ounce;

Gum ammoniac, half an ounce;

S&L

Sal ammoniac, crude, two drams;
Camphorated spirit of wine, one
ounce.

Boil the roots and flowers in a sufficient quantity of water till they become tender; and having then bruised them, add to them the gum ammoniacum, dissolved in a sufficient quantity of vinegar, and likewise the sal ammoniac and spirit: mix the whole together, so as to make them into a cataplasm.

THIS composition is as good a discutient as any thing that can well be contrived in this form of a cataplasm. In some of our hospitals the following more simple form is made use of.

CATAPLASMA DISCUTIENS.

Discutient cataplasm.

Take of

Barley-meal, six ounces;
Fresh hemlock, well bruised, two
ounces;
Crude sal ammoniac, half an
ounce;
Vinegar, a sufficient quantity.

Boil the meal and the hemlock leaves for a little time in the vinegar, and then mix with them the sal ammoniac.

CATAPLASMA MATURANS.

Ripening cataplasm.
Lond.

Take of

Figs, four ounces;
Yellow basilicum ointment, one
ounce;
Galbanum, strained, half an
ounce.

Beat the figs thoroughly in a mortar, occasionally dropping in some spirit of wine or strong ale; then carefully mix with them the ointment, first liquefied along with the galbanum.

CATAPLASMA SUPPURANS.

Suppurating cataplasm.
Edinb. +

Take of

Whitelily (or marshmallow) roots,
four ounces;
Fat figs, one ounce;
Raw onions bruised, six drams;
Galbanum, half an ounce;
Yellow basilicum ointment,
Oil of camomile by decoction,
each one ounce;
Linseed meal, as much as is sufficient.

Let the lily (or marshmallow) roots be boiled along with the figs in a sufficient quantity of water till they become tender; then bruise, and add to them the other ingredients, and make the whole into a cataplasm, according to art. The galbanum must be previously dissolved in the yolk of an egg.

BOTH these compositions are good suppurants or ripeners; though their effects probably depend more on their keeping the part soft, moist, and warm, than on any particular qualities of the ingredients.

SINAPISMUS.

A sinapism.
Edinb. +

Take of

Mustard seed, in powder,
Crumb of bread, each equal parts;
Strong vinegar as much as is sufficient.

Mix and make them into a cataplasm; to which is sometimes added a little bruised garlic.

IN a former edition two sinapisms were described; a *simple*, which is that above directed, without the garlic; and a *compound*, which is as follows.

U u 2

Take

Take of

Mustard seed in powder,
Crumb of bread, each two ounces;

Garlic, bruised, half an ounce;

Black soap, one ounce;

Strong vinegar, a sufficient quantity.

Mix, and make them into a cataplasm according to art.

BOTH these compositions are employed only as stimulants: they often inflame the part and raise blisters, but not so perfectly as cantharides. They are frequently applied to the soles of the feet in the low state of acute diseases, for raising the pulse and relieving the head.

COAGULUM ALUMINOSUM.

*Alum curd.
Lond.*

Take of

Any quantity of the white of eggs.

Agitate it with a sufficiently large lump of alum, in a tin dish, until it is coagulated.

THIS preparation is taken from Riverius. It is an useful astringent epithem for sore, moist eyes, and excellently cools and represses thin defluxions. Slighter inflammations of the eyes, occasioned by dust, exposure to the sun, or other like causes, are generally removed by fomenting them with warm milk and water, and washing them with 'solutions of white vitriol.' Where the complaint is more violent, this preparation, after the inflammation has yielded a little to bleeding, is one

of the best external remedies. It is to be spread on lint, and applied at bed-time.

CATAPLASMA EMOLLIENS.

Emollient cataplasm.

Take of

Crumb of bread, eight ounces;

White soap, one ounce;

Cows milk, fresh, a sufficient quantity.

Boil them a little together.

CATAPLASMA STOMACHICUM.

Stomachic cataplasm.

Take of

The aromatic cataplasm, one ounce;

Expressed oil of mace, two drams;

Anodyne balsam, as much as is sufficient to reduce them into a proper consistence.

CATAPLASMA CAMPHORATUM.

Camphorated cataplasm.

Take of

Aromatic cataplasm, one ounce;

Camphor, one dram.

Mix them together.

CATAPLASMA ISCHIADICUM.

Ischiadic cataplasm.

Take of

Mustard seed, half a pound;

White pepper,

Ginger, each one dram;

Simple oxymel, as much as will reduce them into a cataplasm.

THE use of these compositions, which are taken from our hospitals, may be easily understood from their titles. The last is a very stimulating application, and frequently vesicates the skin.

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Bryony

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